MEDICAL TIMES,
423 J STREET,
Sacramento, Cal.
STORAGE

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE:

[*Late* DUBLIN QUARTERLY JOURNAL OF MEDICAL SCIENCE.]

CONTAINING

ORIGINAL COMMUNICATIONS,

REVIEWS, ABSTRACTS, AND REPORTS,

IN

Medicine, Surgery, and Collateral Sciences.

Edited by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; &c.

THIRD SERIES.

No. CCCI.

JANUARY,

1897.

Biological & Medical Serials
R
31
I85
Ser.3
v.103
no.301
Biological
& Medical
Serials
402407P
27.4.42

DUBLIN: FANNIN & CO., LTD., GRAFTON-STREET,
To whom Communications for the Editor and Books for Review are to be addressed.
LONDON: SIMPKIN, MARSHALL & CO.
EDINBURGH: JAMES THIN.
AGENT IN AMERICA—GUSTAV. E. STECHERT, 810 BROADWAY, NEW YORK.

ANNUAL SUBSCRIPTION, £1.—SINGLE NUMBER, 2s.

"Your Preparation is certainly the best I have ever examined."—H. C. Bartlett, Ph.D., F.C.S.

NINE FIRST-CLASS EXHIBITION AWARDS.

SCOTT'S

MIDLOTHIAN

OATFLOUR

UNEQUALLED as the most wholesome and nutritious Food for INFANTS, YOUNG CHILDREN, and INVALIDS.

It contains in concentrated form those flesh and bone-forming properties peculiar to Oats, and is ENTIRELY FREE FROM HUSK.

SCOTT'S MIDLOTHIAN BISCUITS

Made from Scott's Improved Oatmeal.

DELICIOUS. WHOLESOME. NUTRITIOUS.

Samples Free to the Profession on application to the

SOLE MAKERS—

A. & R. SCOTT, Ltd., GLASGOW and LONDON.

A simple drug
distilled from the
green twigs and leaves
of Hamamelis Virginica.

Hazeline

Retains the full anodyne, styptic and astringent properties of the witch hazel, the volatile active principles of which are preserved only in a preparation distilled, as this is, from fresh green leaves and twigs.

Hazeline is water-white in colour, and combines therapeutic activity with agreeable flavour and pharmaceutical elegance. It is indicated internally in hæmoptysis, hæmatemesis, and other hæmorrhages, and externally in cases of bleeding from cuts, wounds, etc.

BURROUGHS, WELLCOME & Co.
Snow Hill Buildings,
LONDON, E.C.

Australasian Address :—
108, Pitt Street, SYDNEY.

Cable and Telegraphic Address :—"BURCOME, LONDON."

John Wright & Co.'s Publications, Bristol.

New Work. Illustrated. Price 10s. 6d. net, post free.

The SURGERY of the CHEST.

For Students and Practitioners.

By STEPHEN PAGET, M.A. Oxon., F.R.C.S.,

Surgeon to the West London Hospital, and to the Metropolitan Hospital.

Part I.—INJURIES OF THE CHEST. Part II.—DISEASES OF THE CHEST.

"The present is a particularly opportune time for the appearance of a book on the Surgery of the Chest, and no one is better qualified to write such a book than Mr. Paget. . . The author dedicates his book to his illustrious father, and concludes it with an eloquent reference to Lister. The highest praise we can give it is to admit it worthy of such great associations. Mr. Paget has, indeed, produced a work which is a credit, not only to English surgery, but also to English literature."—*Brit. Med. Journ.*

Now Ready. 5s. 6d. each, post free. Copies sent on approval to Medical Men.

In strong Leather, Gilt edges, two Pockets, flap, Pencil case with refill, and Fastener.

Wright's IMPROVED VISITING LISTS, 1897.

Compiled by ROBERT SIMPSON, L.R.C.P., L.R.C.S.

Printed upon fine white paper. The leather cases have been greatly strengthened. The dates appear at the bottom as well as top of the pages, and spaces for visits are ruled alternately red and blue for greater clearness in carrying the eye across the pages. The year is stamped in gold on the back.

Extracts from Press Notices.

"Certain improvements and additions have been made since last year, which render the 'Visiting List' very complete."—*Brit. Med. Journ.*

"It is doubtful if a 'Visiting List' could be better arranged than this."—*Pharm. Journ.*

"These lists are **the most compendious, most generally useful, and in every respect the best** with which we are acquainted."—*Liv. Med. Journ.*

"After an experience of three years **we can give ample testimony to its great utility and convenience.**"—*Bristl. Med. Chir. Journ.*

Form A.

Only requires writing Once a Month. Saves much Time and Labour. Obviates the need of a Day Book if desired.

CONTENTS: List for 160 Patients—Consultants' Record—Cash Column and Journal on every Page—Cash Accounts after Each Month—Obstetric Engagements—Vaccination Engagements—Notifications under the Infectious Diseases Act—Addresses of Nurses, Patients, and others—Journal and Memoranda—Dose Index—Combined Almanac and Utero-Gestation Table, with much General Information.

Form B.—PERPETUAL VISITING LIST.

The same as Form A, but issued in the Perpetual Form, to be commenced at any time and used until filled.

Form C.—WRIGHT'S WEEKLY VISITING LIST.

To meet the requirements of those practitioners who still prefer the older form of a Weekly List. Its general contents are the same as Forms A and B, but in place of the Monthly List it contains a List for 80 Patients weekly on the left-hand pages; while the right-hand pages opposite are left entirely open for Journal purposes, Prescriptions, Notes and Memoranda of all kinds.

BRISTOL: JOHN WRIGHT & CO.

London: Simpkin & Co., Ltd. Hirschfeld Bros., Bream's Buildings.

SOME NEW BOOKS & NEW EDITIONS.

THE SURGERY of the ALIMENTARY CANAL. By ALFRED E. MAYLARD, M.B. Lond. and B.S., Surgeon to the Victoria Infirmary, Glasgow. With 27 Swan-type Plates and 89 Figures in the text. 8vo. 25s.

THE PHYSIOLOGY and the PATHOLOGY of the CEREBRAL CIRCULATION: an Experimental Research. By LEONARD HILL, M.B., Hunterian Professor, Royal College of Surgeons; Grocers' Company Research Scholar. With 41 Illustrations. Royal 8vo, 12s.

STERILITY. By ROBERT BELL, M.D., F.F.P.S.G., Senior Physician to the Glasgow Hospital for Diseases peculiar to Women. 8vo, 5s.

A TEXT-BOOK of BACTERIOLOGY for STUDENTS of MEDICINE. By G. M. STERNBERG, M.D., LL.D., Surgeon-General, U.S. Army. With 9 Heliotype and Chromo-lithographic Plates and 200 Engravings in the text. 8vo, 24s.

ON GALL-STONES or CHOLELITHIASIS. By EDWARD MANSFIELD BROCKBANK, M.D.Vict., M.R.C.P.Lond., late Resident Medical Officer at the Manchester Royal Infirmary, and the Birmingham General Hospital. Crown 8vo, 7s.

A FIRST SERIES of FIFTY-FOUR CONSECUTIVE OVARIOTOMIES. With 53 Recoveries. By A. C. BUTLER-SMYTHE, F.R.C.P. Edin, F.R.C.S. Edin., Surgeon to the Samaritan Free Hospital; Senior Surgeon to the Grosvenor Hospital for Women and Children. 8vo, 6s. 6d.

THE PRACTICE of MIDWIFERY: a Guide for Practitioners and Students. By D. LLOYD ROBERTS, M.D., F.R.C.P., Obstetric Physician to the Manchester Royal Infirmary; Physician to St. Mary's Hospital, Manchester. Fourth Edition. With Two Coloured Plates and 226 woodcuts. Fcap. 8vo, 10s. 6d.

ABDOMINAL SURGERY. By J. GREIG SMITH, Professor of Surgery in University College, Bristol; Surgeon to the Bristol Royal Infirmary. Fifth Edition, with 224 Engravings, Two Vols., 8vo, 36s.

THE MEDICAL DIRECTORY for 1897; giving the Names, Addresses, Qualifications, Appointments, Scientific Distinctions, Published Works, &c., of Medical Practitioners and Dental Licentiates in Great Britain and Ireland; also a List of Registered Practitioners Resident Abroad, and of those in the Naval, Military, and Indian Services; with much General and Statistical Information relating to Medical Education and Practice. 2,090 pages, 14s.

LONDON: J. & A. CHURCHILL, 7 GREAT MARLBOROUGH-STREET.

THE SCIENTIFIC PRESS.

Ready in December. Royal 8vo, cloth gilt. Illustrated by a series of original micro-photographs, and many illustrations in the text, price 7s. 6d. net.

THE MENOPAUSE AND ITS DISORDERS. By A. D. Lieth Napier, M.D., M.R.C.P., &c., &c., late Editor of the *British Gynæcological Journal;* Author of "Notes on Puerperal Fever," "The Thermometer in Obstetrics," &c., &c.

Just published. Fcap. 8vo, cloth gilt, profusely illustrated, price 6s.

CLINICAL DIAGNOSIS: A PRACTICAL HANDBOOK OF CHEMICAL AND MICROSCOPICAL METHODS. By W. G. Aitchison Robertson, M.D., F.R.C.P. (Edin.); Author of "On the Growth of Dentine," "The Digestion of Sugars," &c.

"Students and practitioners ought to welcome heartily a handbook like the one before us, which contains the facts and nothing else, which, without any pretence of literary veneer, accurately and succinctly offers to one who is about to undertake the chemical or microscopical investigation of any specimen or any organ just those points which he ought to know, describes exactly the methods he ought to pursue, mentions the things he ought to have at hand, and, if we may be allowed the expression, gives a recipe for the making of the investigation."—*Hospital.*

Demy 8vo, with two Plates, cloth gilt, over 400 pp., 12*s.* 6*d. net.*

MEDICAL HISTORY FROM THE EARLIEST TIMES. By E. T. Withington, M.A., M.B., Oxon.

"One of the best attempts that has yet been made in the English language to present the reader with a concise epitome of the history of medicine, and as such we very cordially commend it."—*Glasgow Medical Journal.*

Demy 8vo, profusely illustrated with Coloured and other Plates and Drawings, 6s. net.

LECTURES on GENITO-URINARY DISEASES. By J. C. Ogilvie Will, M.D., C.M., F.R.S.E., Consulting Surgeon to the Aberdeen Royal Infirmary, and Examiner in Surgery in the University of Aberdeen.

"We have no hesitation in recommending Dr. Ogilvie Will's work to the practitioner and student of medicine."—*Practitioner.*

London: THE SCIENTIFIC PRESS, Limited, 28 & 29 Southampton-street, Strand, W.C.

"The representative of advanced science."—*Pall Mall Gazette.*

Science Progress:

A QUARTERLY REVIEW OF CURRENT SCIENTIFIC INVESTIGATION.

Edited by J. Bretland Farmer, M.A., with the Co-operation of a powerful Editorial Committee.

Price 3s., or 3s. 3d. post free. Subscription Price, 10s. 6d. per annum, post free.
Vols. I., II., III., IV., and V., in Handsome Cloth Boards, over 500 pp. each.
Now ready. Price 15s. each.

Science Progress is of especial interest to Medical men, who are enabled by its articles to keep thoroughly abreast with the results of modern research in the higher branches of the Medical Sciences.

Offices—28 & 29 SOUTHAMPTON-STREET, STRAND, LONDON, W.C.

The Hospital:

AN INDEPENDENT JOURNAL of the MEDICAL SCIENCES and HOSPITAL ADMINISTRATION.

Published every Saturday. Price Twopence. *Eleventh Year of Publication.*

TERMS OF SUBSCRIPTION: For the United Kingdom ... 10s. 6d. per annum, post free.
For the Colonies and Abroad ... 15s. 2d. „ „

Or may be had in Monthly Parts. Subscriptions may commence at any time, and are payable in advance.

"THE HOSPITAL" is read everywhere, is quoted everywhere, and is accepted everywhere as the medical journal which is the most truly representative of modern medical science.

Offices: The Hospital Building, 28 & 29 Southampton-st., Strand, London, W.C.

NOW READY, post 8vo, with numerous Illustrations. Price 4s. net.

A HANDBOOK OF

Obstetric and Gynæcological Nursing:

Being the Fifth Edition of a "MANUAL FOR MIDWIVES," by the late FLEETWOOD CHURCHILL, M.D., formerly President of the Royal College of Physicians in Ireland.

REVISED AND GREATLY ENLARGED, BY

THOMAS MORE MADDEN, M.D., F.R.C.S.Ed.,

Obstetric Physician and Gynæcologist, Mater Misericordiæ Hospital, Ex-Examiner, Conjoint Board Royal College of Surgeons and Apothecaries' Hall, Ireland; Consulting Physician, Hospital for Children; formerly Master National Lying-In Hospital, Assistant Physician Rotunda Hospital; President Obstetric Sections Royal Academy of Medicine and British Medical Association; and Vice-President British Gynæcological Society, &c.

OPINIONS OF THE PRESS.

"We have gone carefully through the chapters, and can find no fault—in fact our opinion is that not only is it a most excellent and complete work for the nurse's use, but many students and young practitioners would gain much that would be of use to them by its perusal."—THE MEDICAL TIMES AND HOSPITAL GAZETTE.

"DR. MORE MADDEN'S 'Handbook of Obstetric and Gynæcological Nursing,' containing, as it does, a clear and comprehensive summary of the most recent practical information, which should prove sufficient for the guidance of any nurse, may be safely recommended as a reliable text-book. . . . Not a few of the practical details included in this well illustrated and handy volume, will be found deserving the attention of students and junior practitioners."—PROVINCIAL MEDICAL JOURNAL.

"We can confidently recommend this revised work to all interested in the subject of which it treats."—THE HOSPITAL.

Dublin: FANNIN & Co., Ltd., 41 Grafton-st. London: BAILLIÈRE, TINDALL, & COX.
Bristol: JOHN WRIGHT & Co. Edinburgh: JAMES THIN.

Just Published, cap. 8vo, 78 pp., Price 2s. 6d.

LECTURE

ON

THE RESOURCES OF THE PHYSICIAN

IN

THE MANAGEMENT OF

Chronic Diseases of the Heart.

BY

JAMES LITTLE, M.D. (UNIV. EDIN.);

M.D. (UNIV. DUBL. HON. CAUSA); PHYSICIAN TO THE ADELAIDE HOSPITAL; CONSULTING PHYSICIAN TO THE ROTUNDA, ST. MARK'S, THE CHILDREN'S, AND DR. STEEVENS' HOSPITALS.

DUBLIN: FANNIN & CO., LIMITED, 41 GRAFTON-STREET.

LONDON: BAILLIÈRE, TINDALL & COX. BRISTOL: JOHN WRIGHT & CO.

EDINBURGH: JAMES THIN.

FANNIN & CO.'S
Latest Publications.

s. d.

MOORE.—A Text-Book of the Eruptive and Continued Fevers.

By JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dublin, F.R.C.P.I.; Physician to the Meath Hospital, Dublin; Consulting Physician to Cork-street (Fever) Hospital, Dublin, and to the Whitworth Hospital, Drumcondra. With Charts and Illustrations. Post 8vo, 560 pp. ... 15 0

LITTLE.—Lectures on the Resources of the Physician in the Management of Chronic Diseases of the Heart.

By JAMES LITTLE, M.D. (Univ. Edin.); M.D. (Univ. Dubl. *Hon. Causâ*); Physician to the Adelaide Hospital. Cap. 8vo, 78 pp. net, 2 6

SWAN.—Manual of Diseases and Deformities of the Spine.

By ROBERT L. SWAN, F.C.S.I., Member of the Council; Surgeon to Dr. Steevens' Hospital, and to the Orthopædic Hospital, Dublin. Post 8vo, 188 pp., with 33 full-page Lithographic Illustrations. ... net 7 6

ROCHE.—The Imperial Health Manual.

A Popular Guide to Hygiene and Health; being the Authorised English Translation of the Health Manual, published by the Imperial Health Department of Germany. Edited by ANTHONY ROCHE, M.R.C.P.I., Professor of Medical Jurisprudence and Hygiene, Catholic University Medical School, Dublin; Examiner Royal University; Fellow of Sanitary Institute ... ... net 2 6

CHURCHILL.—A Manual for Midwives and Monthly Nurses.

Edited by THOMAS MORE MADDEN, M.D., F.R.C.S.Ed.; Obstetric Physician to Mater Misericordiæ Hospital; Master of the National Lying-in Hospital, Dublin. Crown 8vo. Fifth Edition ... net 4 0

NIXON.—Handbook of Hospital Practice and Physical Diagnosis.

By CHRISTOPHER J. NIXON, M.B., LL.D., Univ. Dublin; M.D. (*Hon. Causâ*) R.U.I.; Physician to the Mater Misericordiæ, Dublin. Post 8vo ... ... net 5 0

SCOTT.—A Manual of Urine Testing.

Including the Physical Characters, Qualitative and Quantitative Examination of the Urine, together with the Clinical Information to be derived therefrom. By the late JOHN SCOTT, B.A., M.B., B.Ch., B.A.O. (R.U.I.); Scholar and Prizeman in Medicine, &c., Queen's College, Belfast. Second Edition. 52 pp. Illustrated ... ... net 1 6

4, GRAFTON-STREET, DUBLIN.

With Coloured Plates and numerous Charts. 560 pp. Price 15s.

TEXT-BOOK

OF THE

ERUPTIVE AND CONTINUED FEVERS.

BY

JOHN WM. MOORE, B.A., M.D., M.Ch., Univ. Dubl.,

Fellow of the Roy. Coll. of Physicians, Ireland; Senior Physician to Meath Hospital, Dublin; Professor of Practice of Medicine in the Schools of Surgery of the Royal College of Surgeons in Ireland;

Consulting Physician to Cork-street Fever Hospital, Dublin, and to the Whitworth, Drumcondra Ex-Scholar and Diplomate in State Medicine, Trinity College, Dublin.

OPINIONS OF THE PRESS.

"The task which Dr. Moore set himself has been accomplished with great success. He has produced a work which will not only serve as a manual on fevers to students, but will certainly be treasured by them as their guide and counsellor when they have become qualified to practise."—*Practitioner.*

"We have nothing but praise for this work. It is a book that must live, and should have a place on the book-shelf of every medical man interested in fevers. The publishers have also done their part well. Truly Ireland is to be congratulated in this its latest contribution to British Medical literature."—*Provincial Medical Journal.*

"This excellent work, on a highly important subject, deserves an earnest welcome from all those interested in the completeness of medical education. We can heartily commend the volume both to students and practitioners, and from its extensive bibliography it cannot fail also to be most useful to those whose researches take them more deeply into this fascinating subject." — *Medical Magazine.*

Dublin : Fannin & Co., Ltd., 41 Grafton-street.

London : Bailliere, Tindall & Cox. Bristol : John Wright & Co.

Edinburgh : James Thin.

Now ready.—Post 8vo, about 200 pages, with 32 full-page Lithographic Illustrations.

Price 7s. 6d., net

MANUAL OF

Diseases and Deformities of the Spine

BY

ROBERT L. SWAN,

Fellow and Member of the Council, and for many years Examiner in Anatomy Surgery, and Operative Surgery, Royal College of Surgeons, Ireland;

Surgeon to Dr. Steevens' Hospital, and to the Orthopædic Hospital, Dublin.

Dublin : Fannin & Co., Ltd., 41 Grafton-street.

London : Bailliere, Tindall & Cox. Bristol : John Wright & Co.

Edinburgh : James Thin.

THE SCALPEL,

A MONTHLY JOURNAL of MEDICINE and SURGERY

Edited by THOMAS M. DOLAN, M.D., J.P., Halifax.

THIS Journal is continued on the same lines as the PROVINCIAL MEDICAL JOURNAL, which for ten years has been so well known under the same editor.

The Subscription Price is the same, only **7/6** *per annum* (*post free*).

The chief features of the PROVINCIAL are maintained, as the Memoirs, Reviews, Chemical Reports on New Drugs, Patent Medicines and Surgical Appliances.

British Health Resorts are still brought into prominence. Special articles on the Army, Navy, and Volunteer Medical Services will appear from time to time.

All Books, Blocks, and Communications should be sent to the EDITOR, HORTON HOUSE, HALIFAX. *All Business Letters should be directed,* "MANAGER, 'SCALPEL,' 9 HORTON-STREET, HALIFAX."

Advertisements may be sent direct to Halifax or London Offices; or to Messrs. PRATT & Co., DUCIE CHAMBERS, 57 MARKET-STREET, MANCHESTER, *from whom terms may be obtained.*

Publishing Offices:—

LONDON:—MESSRS. SIMPKIN, MARSHALL, HAMILTON, KENT & CO., PATERNOSTER-ROW.

HALIFAX:—9 HORTON-STREET. | MANCHESTER:—57 MARKET-ST.

Agencies:—

EDINBURGH:— MR. J. THIN, 54 SOUTH BRIDGE. | DUBLIN:— FANNIN & CO., LTD., 41 GRAFTON-ST.

And may be obtained through all Booksellers and Newsagents.

THE BEVERAGE OF

Health

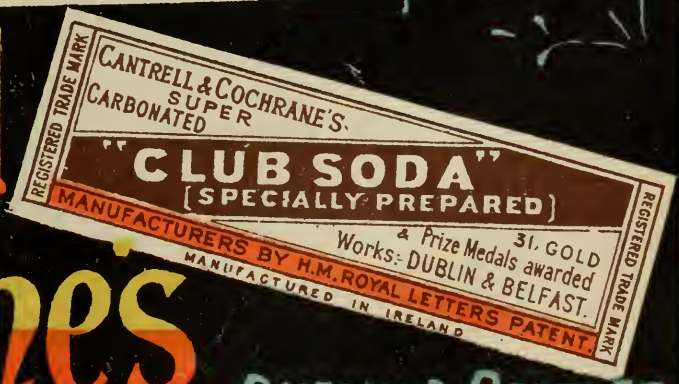
CANTRELL & COCHRANE'S
SUPER-CARBONATED
"CLUB SODA."
Specially Prepared.

C annot be excelled as a neutralizer of the
L actic acid in the Blood.
U se it freely,
B ecause it promotes digestion.
S everal members of the Medical profession
O f the highest repute
D ilate on its merits
A s the most wholesome daily beverage that can be taken.

Purveyors to Her Majesty's Houses of Parliament.

THIRTY GOLD & PRIZE MEDALS

By Special Appointment To
H.R.H. The Prince of Wales
By
Royal Letters Patent
To The
Viceregal Court
Ireland.
Purveyors
To
H. Majesty's Houses
Of Parliament



Cantrell & Cochrane's

DUBLIN & BELFAST

31, GOLD & PRIZE MEDALS AWARDED.

MANY of the non-intoxicating beverages introduced as substitutes for alcoholic drinks tend, either in form or flavour, to directly frustrate the cause they professedly serve. The cups which cheer but do not inebriate are not so common, but when a really palatable and wholesome drink of the kind is found, it should meet with all the encouragement temperance advocates can accord. This, at least, would appear to be the view of Mr. S. C. HALL, the venerable apostle of total abstinence. In a late number of *Social Notes* he says :—"I have looked about for something to drink, and I think I have found it—pleasant, palatable, healthful. I refer to the Ginger Ale manufactured by Cantrell & Cochrane (of Dublin and Belfast). I know of no drink so delicious, and I believe it to be as healthful as it is agreeable." This is praise from the Sir Hubert Stanley of temperance, and where he leads, the public may safely follow.—*Court Circular.*

A SPECIALITY.

When ordering see that you get the "CLUB."

Cantrell & Cochrane's Aromatic Ginger Ale

Is one of the Purest and most Wholesome Drinks in existence, being equally suitable for warm or cold weather. It invigorates and promotes perspiration, and is a warm stomachic beverage, as sparkling and clear as champagne, has a most agreeable odour, is perfectly free from any intoxicating quality, besides being pleasant to the taste, and possessing a delicious "bouquet." It has an advantage over all other drinks of the same kind, inasmuch as it does not deteriorate by being decanted into glass or other jugs, thus permitting the uncorking to be performed away from the table or ball-room without the beverage becoming flat or losing its effervescence, in fact, many consumers say it is vastly improved after it has been opened some hours : this innate freshness is the result of a process of manufacture, by which the carbonic acid gas becomes thoroughly incorporated with the liquid, and does not immediately escape on the removal of the cork. THIRTY ONE Gold and Prize Medals have been awarded CANTRELL & COCHRANE at the various International Exhibitions held all over the world, for the Perfect Purity of their manufacture.

Extract from "*A Friend to Temperance.*"

"SPARKLING MONTSERRAT," the drink for the Gouty & Rheumatic

Works—DUBLIN & BELFAST, IRELAND.

Soda, Seltzer, Potass and Lithia Waters, Lemonade, &c., &c.,
Can be purchased from all Wine Merchants, Grocers, and Chemists.

ARMY MEDICAL STAFF.

AN EXAMINATION OF CANDIDATES

FOR

THIRTY-FIVE COMMISSIONS

IN

The Army Medical Staff,

WILL BE HELD AT THE

EXAMINATION HALL, VICTORIA EMBANKMENT, W.C.,

On the 5th FEBRUARY next, and following days.

Applications for Admission to the Competition should be made in writing, without delay, to the Director-General, Army Medical Department, 18 Victoria-street, London, S.W.

The List will be closed on the 28th January.

Signed, J. JAMESON, *Director-General.*

War Office, London,
3rd December, 1896.

INDIAN MEDICAL SERVICE.

India Office,
14th December, 1896.

AN EXAMINATION

FOR

SEVEN APPOINTMENTS

TO

Her Majesty's Indian Medical Service

WILL BE HELD

IN LONDON, on 5th FEBRUARY, 1897,

AND FOLLOWING DAYS.

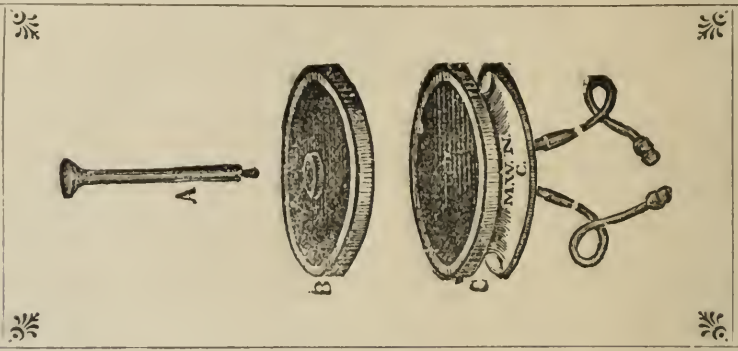
Copies of Regulations for the Examination, with information regarding the Pay and Retiring Allowances, &c., of Indian Medical Officers, may be obtained on application to the Military Secretary, India Office, London, S.W., to whom the necessary certificates must be sent, so as to reach him not later than the 22nd January, 1897.

At this and subsequent examinations the new scale of marks for the various subjects already notified will come into force.

O. R. NEWMARCH,
Major-General, Military Secretary.

THE

PHONENDOSCOPE.



Invented by Professors BAZZI and BIANCHI.

THIS Instrument is a combination of the principle of the Phonograph and the Binaural Stethoscope, and by its use in auscultation the various sounds in the human body are intensified and rendered more distinct. The normal and abnormal sounds of the heart and lungs can be easily detected through the clothes of a person in ordinary dress. It is expected by the inventors that this instrument will be of the greatest value to the physician and surgeon in helping to elucidate obscure points of diagnosis.

Price, in Case, with full description, 25s.

FANNIN & COMPANY, LTD.,

Manufacturers of Surgical Instruments and Appliances:

Makers of Artificial Limbs and Orthopædic Apparatus;

MEDICAL BOOKSELLERS AND PUBLISHERS;

41 GRAFTON-STREET, DUBLIN.

TELEPHONE No. 198. *Registered Telegraph Address*—"FANNIN, DUBLIN."

Established 1829.

SYR. HYPOPHOS. CO., FELLOWS.

CONTAINS THE ESSENTIAL ELEMENTS of the Animal Organisation—Potash and Lime;

THE OXIDISING AGENTS—Iron and Manganese;

THE TONICS—Quinine and Strychnine;

AND THE VITALISING CONSTITUENT—Phosphorus: the whole combined in the form of a Syrup with a SLIGHTLY ALKALINE REACTION.

IT DIFFERS IN ITS EFFECTS FROM ALL ANALOGOUS PREPARATIONS; and it possesses the important properties of being pleasant to the taste, easily borne by the stomach, and harmless under prolonged use.

IT HAS GAINED A WIDE REPUTATION, particularly in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

ITS CURATIVE POWER is largely attributable to its Stimulant, Tonic, and Nutritive properties, by means of which the energy of the system is recruited.

ITS ACTION IS PROMPT; it stimulates the appetite and the digestion, it promotes assimilation, and it enters directly into the circulation with the food products.

The prescribed dose produces a feeling of buoyancy, and removes depression and melancholy; HENCE THE PREPARATION IS OF GREAT VALUE IN THE TREATMENT OF MENTAL AND NERVOUS AFFECTIONS. From the fact, also, that it exerts a double tonic influence, and induces a healthy flow of the secretions, its use is indicated in a wide range of diseases.

NOTICE—CAUTION.—The success of Fellows' Syrup of Hypophosphites has tempted certain persons to offer imitations of it for sale. Mr. Fellows, who has examined samples of several of these, finds that no two of them are identical, and that all of them differ from the original in composition, in freedom from acid reaction, in susceptibility to the effects of oxygen when exposed to light or heat, in the property of retaining the strychnine in solution, and in the medicinal effects.

As these cheap and inefficient substitutes are frequently dispensed instead of the genuine preparation, physicians are earnestly requested, when prescribing the Syrup, to write "Syr. Hypophos. FELLOWS."

As a further precaution, it is advisable that the Syrup should be ordered in the original bottles (4/- or 7/-); the distinguishing marks which the bottles (and the wrappers surrounding them) bear, can then be examined, and the genuineness—or otherwise—of the contents thereby proved.

Wholesale Agents:

BURROUGHS, WELLCOME & CO.,

SNOW HILL BUILDINGS, LONDON, E.C.

PERIODICALS WITH WHICH THE DUBLIN JOURNAL OF MEDICAL SCIENCE IS EXCHANGED.

GREAT BRITAIN.

1. Transactions of the Royal Medical and Chirurgical Society. 20 Hanover-square, London, W. London: Longmans.
2. The Edinburgh Medical Journal. Oliver and Boyd.
3. The Retrospect of Medicine. Edited by James Braithwaite. Simpkin, Marshall, and Co.
4. The Pharmaceutical Journal, London.
5. The Lancet.
6. The British Medical Journal.
7. The Journal of Mental Science. London: Churchill.
8. The Glasgow Medical Journal A. MacDougall.
9. The Medical Press and Circular.
10. Transactions of the Obstetrical Society. London: Longmans.
11. The Practitioner; a Monthly Journal of Therapeutics. Macmillan and Co.
12. The Journal of Anatomy and Physiology. Macmillan.
13. The Bristol Medico-Chirurgical Journal.
14. The British Gynæcological Journal. London: John Bale & Sons.
15. The British Journal of Dermatology.
16. The Asclepiad.
17. The Medical Chronicle.
18. The Birmingham Medical Review.
19. The Liverpool Medical Journal.
20. Guy's Hospital Reports. Guy's Hosp., London.
21. The Hospital. London: The Scientific Press Company.

CANADA.

22. The Montreal Medical Journal. Box 273, P.O., Montreal.

AMERICA.

23. The American Journal of the Medical Sciences. New York and Philadelphia: Messrs. Lea Brothers & Co. London: Trübner and Co.
24. The Medical Record. New York: William Wood & Co.
25. Medical News. Philadelphia: Henry C. Lea, Son and Co.
26. The American Journal of Insanity, Utica, N. Y. State Lunatic Asylum.
27. The American Journal of Obstetrics and Diseases of Women and Children. New York: William Wood and Company. London: S. Low, Son, and Marston.

AMERICA.—*continued.*

28. The New York Medical Journal. New York and London: D. Appleton & Co.
29. The Medical and Surgical Reporter. Philadelphia: N. A. Randolph, M.D., and Charles W. Dulles, M.D.
30. Journal of Cutaneous and Venereal Diseases. New York: D. Appleton & Co.
31. Chicago Journal of Nervous and Mental Disease.
32. The St. Louis Medical and Surgical Journal. St. Louis: Frank M. Rumbold and Co.
33. The Journal of the American Medical Association. Chicago, Illinois.
34. The Occidental Medical Times. James H. Parkinson, Editor, Sacramento, California.
35. Pacific Medical Journal. 603 Sutter-street, San Francisco: Winslow Anderson, A.M., M.D.
36. Archives of Pediatrics. New York: E. B. Treat.
37. The American Gynæcological and Obstetrical Journal. New York: D. Appleton & Co.

FRANCE.

38. Répertoire de Pharmacie, Archives de Pharmacie, et Journal de Chimie Médicale réunis. Troisième Série. Paris: M. C. Crinon.
39. Gazette Médicale de Paris. Paris: 28 Rue Vignon.
40. Journal de Pharmacie et de Chimie &c. Paris: Victor Masson.
41. Archives Générales de Médecine Paris: Asselin.
42. Bulletin del'Académie de Médecine. Paris: G. Masson.
43. Revue de Thérapeutique Médico-Chirurgicale. Paris: Masson.
44. Annales Médico-Psychologiques. Par MM. Baillarger, Cerise, et Lunire. Paris: V. Masson.
45. Bulletin Général de Thérapeutique. Médicale et Chirurgicale. Par le Docteur Félix Bricheteau. Paris.
46. Répertoire de Pharmacie. Par M. Eug. Lebaigue. Paris: Rue de la Perle, 11.
47. Gazette des Hôpitaux. Paris: 4, Rue de l'Odèon.
48. Lyon Médical, Organe Officiel de la Société de Médecine. Lyon: Louis Savy.
49. Revue des Sciences Médicales en France et à l'étranger. Paris: G. Masson:

FRANCE.—*continued.*

50. Gazette Hebdomadaire. Paris: G. Masson.

51. Revue de Chirurgie. Paris: Félix Alcan.

52. Revue Hebdomadaire de Laryngologie, d'Otologie, et de Rhinologie. Paris: Octave Doin.

53. Annales des Maladies des Organes Génito-Urinaires. Paris: 22 Place St. Georges.

54. La Presse Médicale. Georges Carré, 3 Rue Racine, Paris.

BELGIUM.

55. Bulletin de l'Académie Royale de Médecine de Belgique. Bruxelles: F. Hayez.

56. Annales d'Oculistique. Bruxelles.

GERMANY.

57. Archiv für Gynækologie. Redigirt von Gusserow und Leopold. Berlin: August Hirschwald.

58. Centralblatt für die medicinischen Wissenschaften. Berlin: August Hirschwald.

59. Jahrbuch für Kinderheilkunde und physische Erziehung. Leipzig: B. G. Teubner.

60. Archiv für pathologische Anatomi und Physiologie, &c. Herausgegeben von R. Virchow. Berlin: G. Reimer.

61. Berliner klinische Wochenschrift. Berlin: Hirschwald.

62. Archiv für klinische Chirurgie. Begründet von Dr. B. von Langenbeck. Berlin: Hirschwald.

63. Archiv für Psychiatrie und Nervenkrankheiten. Berlin: August Hirschwald.

64. Zeitschrift für physiologische Chemie. Herausgegeben von F. Hoppe-Seyler. Strassburg: Karl J. Trübner.

65. Deutsche Medizinal-Zeitung. Herausgegeben von Dr. Julius Grosser. Berlin: Eugen Grosser.

66. Albrecht von Graefe's Archiv für Ophthalmologie. Göttingen: Professor Dr. Th. Leber.

67. Centralblatt für klinische Medicin, und Centralblatt für Gynäkologie. Berlin: Hirschwald.

68. Fortschritte der Medecin, H. Kornfeld, Charité Strasse, 6. Berlin, N. W.

NORWAY.

69. Norsk Magazin for Lægevidenskaben. Udgivet af det medicinske Selskab i Christiania. Christiania: Paa Th. Steen.

SWEDEN.

70. Hygiea, medicinsk och farmaceutisk Maonads-skrift. Stockholm: P. A. Norstedt och Söners förlag.

71. Nordiskt medicinskt Arkiv. Redigeradt af Dr. Axel Key, Prof. i Patolog. Anat. i Stockholm. Stockholm: Samson och Wallin.

72. Upsala Läkareförenings Förhandingar. Upsala: Ed. Berling.

DENMARK.

73. Hospitals-Tidende. Optegnesler af praktisk Lægekunst fra Ind-og Udlandet. Kjöbenhavn: Jacob Lund. London: Asher & Co.

74. Bibliothek for Læger. Kjöbenhavn: Reitzelske Forlag (George C. Grön).

75. Ugeskrift for Læger. Kjöbenhavn: Reitzelske Forlag (George C. Grön).

ITALY.

76. Lo Sperimentale, Giornale Medico. Via San Gallo, 33, Florence.

77. Il Policlinico. Roma: Società Editrice Dante Alighieri.

AUSTRALASIA.

78. The Australasian Medical Gazette. Sydney: L. Bruck.

INDIA.

79. The Indian Medico-Chirurgica Review. Bombay: N. K. Rao & Co. Tardeo.

80. Indian Medical Gazette. Calcutta Thacker, Spink, & Co.

BOOKS, PAMPHLETS, AND PERIODICALS RECEIVED—JAN., 1897.

1. Ophthalmic Operations as practiced on Animals' Eyes. By Clarence A. Veasey, A.M., M.D. Philadelphia: The Edwards & Docker Co. 1896. 8vo. Pp. 99.

2. La Revue Médicale. Cinquième Année. Nos. 124, 125, 126, 127. 18, 25 Novembre; 2, 9 Decembre, 1896. Paris: Georges Collet.

3. Pediatrics. Vol. II. Nos. 10 and 11. November 16th and December 1st, 1896. London: Harrison and Sons.

4. The Laryngoscope. Vol. I. No. 5. November, 1896. St. Louis, Mo.

5. The Philadelphia Polyclinic. Vol. V. No. 46, 47, 48, 49. November 14, 21, 28; December 5. 1896.

6. The Post-Graduate. November, 1896. Vol. XI. No. 11. New York.

7. Medical Standard. Chicago. Vol. XVIII. No. 11. November, 1896. Chicago: G. P. Engelhard & Co.

8. Blätter für klinische Hydrotherapie. VI. Jahrgang. Nr. 11. Wien. November, 1896.

9. Nouvelle contribution à l'étude de l'uvéite irienne. Par le Docteur E. Grandclément. Lyon: F. Plan. 1897. Pp. 22. [Duplicate copies].

10. Das konträre Geschlechtsgefühl. Von Havelock Ellis und J. A. Symonds. Leipzig: Georg H. Wigand. 1896. 8vo. Pp. 308.

11. Il Pratico. Anno I. 15° Novembre; 1° Dicembre, 1896. Anno I. Num. 2, 3. Firenze: G. Civelli. 1896.

12. Medicine and Kindred Arts in the Plays of Shakespeare. By Dr. John Moyes, Largs. Glasgow: James MacLehose & Sons. 1896. 8vo. Pp. 123.

13. On Oyster Culture in Relation to Disease. Twenty-fourth Annual Report of the Local Government Board, 1894-95. Supplement in continuation of the Report of the Medical Officer for 1894-95. London: Eyre & Spottiswoode. 1896. Pp. xxvi. + 174.

14. The Education of the Central Nervous System. By Reuben Post Halleck, M.A. (Yale). New York: The Macmillan Company. 1896. 8vo. Pp. 258.

15. Annals of Gynæcology and Pædiatry. Vol. XI. No. 2. November, 1896. Boston: Ernest W. Cushing.

16. Ueber den Werth der Vasogenpräparate (Pearson). Von Dr. Goliner in Erfurt. Reprint. Leipzig. 1896. Pp. 4.

17. Bulletin de l'Académie royale de Médecine de Belgique. Quatrième Série. Tome X. No. 9. Bruxelles: F. Hayez. 1896. 8vo.

18. Catalogue de la Maison Vasseur. Tramond: Paris, 9 Rue de l'École de Médecine. Anatomie, Ostéologie, Accouchements, Pathologie, Anthropologie. Pp. 56.

19. Versuche mit Somatose. Von Dr. Ferdinand Schramm. Wien. 1896. Reprint. Pp. 15.

20. Pathologie et Traitement du Prurit. Par le Dr. De Wannemaeker (Gand). Reprint. 1896. Pp. 7.

21. The Hæmatozoon of Malaria and its discovery in Water and Soil. By Surgeon-Captain Patrick Hehir, M.D., D.P.H (Cantab), Hyderabad, Deccan. 1896. Pp. 60.

22. Cycling as a Cause of Heart Disease. By George Herschell, M.D., Lond. London: Baillière, Tindall & Cox. 1896. Pp. 44.

23. The Progress of Modern Chemistry. By J. L. W. Thudichum, M.D., F.R.C.P. Lond. London: Baillière, Tindall & Cox, 1896. 1896. 8vo. Pp. 212.

24. A Vest-pocket Medical Dictionary. By Albert H. Buck, M.D. London: Baillière, Tindall & Cox. 1897. Pp. 529.

25. Western Australian Statistics of Gold Out-put. London: Sir Joseph Causton & Sons. 1896. Pp. 56.

26. International Medical Magazine. Vol. V. No. 10. November, 1896. Philadelphia, Pa.

27. Some Results of Induction of Premature Labour for Contracted Pelvis. By A. R. Warden, M.A., M.B., Glasgow. A. Stenhouse. 1896. Pp. 33.

28. The Surgery of the Alimentary Canal. By A. Ernest Maylard, M.B., B.S. (Lond.). London: J. & A. Churchill. 1896. 8vo. Pp. 724.

29. The Universal Medical Journal. Philadelphia. October, 1896. The F. A. Davis Co.

30. Gaceta médica de Costa Rica. Año I. Núm. 7. Primo de Noviembre de 1896. San José de Costa Rica. 1896.

31. Letts' Diaries for 1897. London: Cassell & Co.

32. Arbeit und Wille: Personenkunde oder klinische Psychologie zur Grundlegung der Psychohygiene. Von Dr. E. Hallervorden. Heft. 2. Würzburg: C. Kabitsch. 1897. Pp. 50.

33. The Magnet Magazine. Vol. I. No. 8. London: James Henderson. Wednesday, December 9, 1896.

34. The Canadian Practitioner. Vol. XXI. No. 11. November, 1896. Toronto: The Bryant Press.

35. The New Sydenham Society. Volume CLVIII. A Treatise on Cholelithiasis. By B. Naunyn, M.D. Translated by Archibald E. Garrod, M.A., M.D., F.R.C.P. London: The New Sydenham Society. 1896. 8vo. Pp. 197.

36. The Medical Pioneer. Vol. 4. No. 15. December, 1896. London.

37. Adenoid Vegetations in the Vault of the Pharynx. By Seth Scott Bishop, B.S., M.D., Chicago. Reprint. 1896. Pp. 3.

38. Acute Suppurative Inflammation of the Middle Ear: acute suppurative mastoiditis: abscess of the neck: operation. By Seth Scott Bishop, M.D., D.C.L., Chicago. Reprint. 1896. Pp. 5.

39. A Clinical Study of Twenty-one Thousand Cases of Diseases of the Ear, Nose, and Throat. By Seth Scott Bishop, B.S., M.D., LL.D. Chicago. 1896. Reprint. Pp. 7.

40. The Doctorate Address delivered at the Commencement of the Illinois Medical College. By Seth Scott Bishop, M.D., LL.D. Reprint. 1896. Pp. 7.

41. A Text-book for Training Schools for Nurses. By P. M. Wise, M.D. In Two Volumes. New York & London: The Knickerbocker Press (G. P. Putnam's Sons). 1896. Vol. I. Pp. 247. Vol. II. Pp. 327.

42. Traité de Thérapeutique et de Matière Médicale. Par Victor Aud 'Houi. Paris: G. Steinheil. 1897. 8vo. Pp. 1114.

43. Transactions of the American Otological Society. Vol. VI. Part III. New Bedford, Mass.: Mercury Publishing Company. 1896.

44. The Private Sanatoria for Consumptives. By Dr. Arthur von Jaruntowsky, of Posen. Translated by E. Clifford Beale, M.A., M.B. Cantab, F.R.C.P. London: The Rebman Publishing Co. 1896. Pp. 48.

45. Gaillard's Medical Journal. December, 1896. New York.

46. Résultats de l'Examen histologique de 64 Végétations adenoïdes. Par le Dr. Brindel. Bordeaux: G. Gounouilhou. 1896. Pp. 30.

THE LIQUOR CARNIS CO.,

London and Paris,

FOODS FOR INFANTS AND INVALIDS,

UTILISING THE

MEAT and the BONE, or the MARROW and the JUICE.

(a) **Liquor Carnis** (CAFFYN).—The pure juice of beef—exactly as the fluid which is squeezed out of a grape or an orange is the juice of the orange or grape. May be added to HOT Soups, Beef-Tea, &c.
3 oz., 1s. 9d. ; 6 oz., 3s. 4d.

(b) **Malto Carnis** (CAFFYN). The modern form of administering Raw Beef Juice, in which combination the difficulty as to taste of freshly squeezed Beef Juice has been completely overcome.
9d., 1s. 9d. & 4s. 6d.

(c) **L.C.C. Meat Juice**, where a stimulating mixture of Raw Meat Juice and the extractives are required. Tastes like Roast Beef. 1s. 9d.

(a) **Virol**, containing the Red as well as the Yellow marrow, is a valuable *Hæmatinic* as well as a Fat-Food.
9d., 2s. 6d. & 3s. 6d.

(b) **Marrol**. Yellow marrow with malt. A substitute for Cod Liver Oil. Not a Hæmatinic, as it does not contain the Red marrow Virol does ! Almost as cheap as Cod Liver Oil.
? oz., 1s. 3d.

(c) **Virol sans Sucre** is a form of the two marrows—Red and Yellow—suitable in cases where carbohydrates are too sweet or not admissible.
1s. & 5s.

Specimens supplied for test purposes by THE LIQUOR CARNIS CO., London, E.C.
Communications: ASTON CLINTON.

Humanized Milk.

For Infants and Invalids.

Silver Medal, National Health Society.

Beware of Imitations.

DAIRY COMPANY · HUMANIZED · MILK · AYLESBURY · LIMITED · TRADE MARK

SAMPLES FREE TO MEMBERS OF THE MEDICAL PROFESSION.

To be obtained only from

The AYLESBURY DAIRY COMPANY, Limited,

31 St. Petersburgh Place, Bayswater, London, W.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CCCI.—JANUARY 1, 1897.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. I.—An Address on Serum-Therapy, delivered at the Opening of the Winter Session of the North of Ireland Branch of the British Medical Associntion at Belfast, November, 1896. By PROFESSOR WHITLA, M.D., President of the Branch, - - - - 1

ART. II.—Note on a Successful Case of Disarticulation at the Hip-joint; with Observations on the Method of Operating. By R. GLASGOW PATTESON, M.B. Univ. Dubl.; F.R.C.S.I.; Surgeon to the Meath Hospital and Co. Dublin Infirmary; late Surgeon to Extern Department, St. Vincent's Hospital, - - - - 26

ART. III.—Asymmetry of the Sternum. By A. BIRMINGHAM, M.D.; Professor of Anatomy, Catholic University, Dublin, - - 31

ART. IV.—A Case of Ruptured Tubal Pregnancy treated by Abdominal Section; Recovery. By ALFRED J. SMITH, M.B.; Examiner in Midwifery, Royal University of Ireland; Professor of Midwifery, Catholic University, Ireland; Gynæcologist, St. Vincent's Hospital, - - - - - - - - 37

ART. V.—Oil-rubbing in Dermatological Practice. By H. S. PURDON, M.D.; Consulting Physician, Belfast Hospital for Diseases of the Skin, &c., - - - - - - - - 39

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. A Text-book of Bacteriology, including the Ætiology and Prevention of Infective Diseases, and a Short Account of Yeast and Moulds, Hæmatozoa and Psorosperms. By EDGAR M. CROOKSHANK, M.B., Professor of Comparative Pathology and Bacteriology and Fellow of King's College, London. Fourth edition, - - 43

2. Electro-Physiology. By W. BIEDERMANN. Translated by FRANCES A. WELBY. Vol. I., - - - - - - 48

PAGE

3. The Laboratory Text-book of Public Health. By William R. Smith, M.D., D.Sc., F.R.S. Edin.; D.P.H. Camb.; Professor of Forensic Medicine and Director of the Laboratories of State Medicine, King's College, - - - - - - - 52

4. The Imperial Health Manual: being the Authorised English Edition of the Official Health Manual issued by the Imperial Health Department of Germany. Edited by Antony Roche, M.R.C.P.I.; &c.; Professor of Medical Jurisprudence and Hygiene, Catholic University, - - - - - - - - 54

5. Animal Tuberculoses and their relation to Human Tuberculosis. By Ed. Nocard, Professor of the Alfort Veterinary College. Translated by A. Scurfield, M.D. Ed., D.P.H. Camb., - - 55

6. The Surgery of the Chest. By Stephen Paget, M.A. Oxon., F.R.C.S.; Surgeon to the West London Hospital and to the Metropolitan Hospital, - - - - - - - 56

7. Memorials of the Faculty of Physicians and Surgeons of Glasgow (1599–1850). With a Sketch of the Rise and Progress of the Glasgow Medical School and of the Medical Profession in the West of Scotland. By Alexander Duncan, B.A. Lond.; Secretary and Librarian of the Faculty, - - - - - - 59

8. Deaf-Mutism: a Clinical and Pathological Study. By James Kerr Love, M.D., Aural Surgeon to the Glasgow Royal Infirmary; Honorary Aurist to the Glasgow Deaf and Dumb Institution. With Chapters on the Education and Training of Deaf-Mutes. By W. H. Addison, A.C.P.; Principal of the Glasgow Deaf and Dumb Institution, - - - - - - - - 60

9. A Treatise on Cholelithiasis. By B. Naunyn, M.D., Professor of Clinical Medicine in the University of Strassburg. Translated by Archibald E. Garrod, M.A., M.D., F.R.C.P., - - - 62

10. A Manual of Midwifery. By W. E. Fothergill, M.B., &c., - 63

11. Sterility. By Robert Bell, M.D., F.F.P.S.G., - - - 65

12. Our Baby. By Mrs. Langton Hewer. Fourth Edition, - 67

13. Summary of a Report by Dr. S. P. Impey, M.D., M.C., on his Tour through Europe and Egypt for the purpose of enquiring into certain Matters connected with Leprosy, - - - - 68

14. The Profession of Medicine: its Study and Practice; its Duties and Rewards. By Charles West, M.D.; Fellow, and late Senior Censor of the Royal College of Physicians; Founder of the Hospital for Sick Children; Foreign Associate of the National Academy of Medicine of Paris, &c., - - - - - - - 69

15. The Magnet Magazine. Vol. V. No. 8, - - - - 70

16. Gaceta Médica de Costa Rica. Revista Nacional de Medicina Cirugia, Farmacia é Higiene. Director, Dr. Cesar Borja, - 70

17. Catechism Series. Forensic Medicine, - - - - 72

PAGE

PART III.—MEDICAL MISCELLANY.

ROYAL ACADEMY OF MEDICINE IN IRELAND:—

SECTION OF ANATOMY AND PHYSIOLOGY.

Exhibits. By PROFESSOR PURSER and DR. A. F. DIXON, - 73
Genu Valgum Adolescentium. By DR. JOHNSON SYMINGTON, - 73
Ossification of the Third Trochanter. By DR. A. F. DIXON, - 74
Effects of Right-handedness on Sternum. By PROFESSOR BIRMINGHAM, - - - - - - - - 75

SANITARY AND METEOROLOGICAL NOTES. Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R. Met. Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, November 28, 1896, 77
Meteorology—Abstract of Observations made at Dublin for the Month of November, 1896, - - - - - 84

PERISCOPE:—

Letts's Diaries for 1897, - - - - - - 42
Army Medical Department, - - - - - 42
Crying the Eyes out, - - - - - - 76
New Cause of Lead Poisoning, - - - - - 89
Disinfection of Apartments, - - - - - 90
Food of Schoolboys, - - - - - - 90
Antitoxin in the Treatment of Diphtheria, - - - 91
Cold Baths in Enteric Fever, - - - - - 93
Symphysiotomy in the United States, - - - - 93
Medical Students in Italy, - - - - - - 94
Posture in Sleep, - - - - - - - 94
Cyst of Urachus, - - - - - - - 95
Bradycardia, - - - - - - - 95

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS:—

Tabloids of Cascara and Belladonna, - - - - 96
Residuum Rubrum "Tabloids," - - - - - 96

THE KEPLER

Extract of Malt.

THIS preparation has long held a premier position among malt extracts. It is a standard product containing a full percentage of active diastase, carbo-hydrates, albuminoids and phosphates. It is a powerful food and digestive agent, and is eminently suited for use as a restorative diet in exhaustion, sickness and convalescence. The various ways in which it may be used are :—(1) As a sweetener and digestive of gruels, hominy, rice, flour, coffee, tea, chocolate, etc. (2) As a nutritive adjunct to other foods. It is especially valuable as an addition to cow's milk intended for the feeding of infants. A teaspoonful added to each bottleful of milk prevents the caseine forming hard insoluble clots in the stomach. (3) In inflammatory conditions of disease it makes a bland nutritious drink when diluted with aërated water or peptonised milk. (4) Children will eat Kepler Extract of Malt when spread upon bread as readily as they would eat honey. They relish it immensely, and quickly thrive and fatten on it. (5) Brandy or whisky, with peptonised milk, and eggs, well beaten and stirred with Kepler Extract of Malt, makes an excellent stimulant and nutritious drink for the sick.

Supplied to the Medical Profession in bottles at 1s. 8d. and 3s. each.

Burroughs, Wellcome & Co.,

Snow Hill Buildings, LONDON, E.C.

Australian Address:—108, Pitt St., SYDNEY, N.S.W. Cable & Telegraphic Address:—"BURCOME, LONDON."

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

JANUARY 1, 1897.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*An Address on Serum-Therapy*, delivered at the Opening of the Winter Session of the North of Ireland Branch of the British Medical Association at Belfast, November, 1896. By PROFESSOR W. WHITLA, M.D., President of the Branch.

IT has from the earliest times been recognised that some individuals, and even some races of mankind, are naturally immune or insusceptible to certain infective diseases, and similar facts were known to maintain amongst animals. This so-called *natural* immunity, associated with many theories in physiology and pathology, we must pass over as not directly bearing upon our present subject.

Acquired immunity has also been for ages recognised, since it was noticed that an attack of some infectious diseases protected an individual for long periods or for life from subsequent attacks of the same disorder. This acquired immunity or insusceptibility has been the subject of much labour and research, and the origin of innumerable theories during the last decade.

The discovery of Metschnikoff, which at one time seemed to demonstrate that its explanation lay in the phenomena of

phagocytosis, has gradually given way to the view first promulgated by Buchner, that acquired immunity or insusceptibility depends upon the presence of certain *chemical* or unorganised substances or bodies in the blood.

This view was held long before these substances were discovered or demonstrated to exist. Their discovery in no way negatived the researches of Metschnikoff or disproved the facts of phagocytosis, but minimised their influence as a factor in producing acquired immunity.

It is interesting to note that Sir Joseph Lister, in his recent Address to the British Association, states that by a long series of most beautiful researches Metschnikoff has firmly established the great truth that phagocytosis is the main defensive means possessed by the living body against the invasion of its microscopic foes, and that, especially in the case of natural immunity, phagocytosis seems to be the sole defensive agency. He also believes that in the case of acquired immunity the useful elements of the serum may be in part at least derived from the digestive juices of the phagocytes.

With the discovery that the blood of animals artificially rendered immune contained certain chemical substances, came the possibility of a new system of treatment.

It is of great interest to see how this new system became possible, and it has a very distinct bearing upon our subject to trace the discovery of serum therapeutics. In the literature of the subject, and even in the recent writings of those who have attempted to give a history of its origin, one cannot fail to be struck with the scanty references or the total absence of allusion to Pasteurism, though the new treatment has sprung directly out of the results of Pasteur's brilliant labours.

Pasteur conceived the idea, and carried it into practice, of rendering an animal immune by injecting into its tissues gradually increasing doses of attenuated virus. He placed the microbes which caused hydrophobia, anthrax, and other

diseases in such unfavourable conditions that they partially lost their potency, and could be injected without harm in this attenuated form into animals. Then followed the demonstration that the animal so treated was proof against enormous doses of the original virus in its most potent form.

It will be noticed that Pasteur in this was but working out scientifically the great problem which had been successfully solved by the immortal Jenner many years before. For it may be accepted that the Jennerian vaccination was but the protection of the individual (by the *attenuated* virus of small-pox) against the virulent form of the human disease.

Pasteur's next step, or, if I be permitted to so put it, the next step towards the discovery of serum therapeutics, was to demonstrate in the human subject that the introduction of the attenuated virus was not only protective or preventive but *curative.*

The new method now outran the progress of Preventive Medicine, and heralded new triumphs in Therapeutics. The statistics of the Pasteur Institute up to 1895 showed a total mortality of one-fourth per cent., after deducting the few cases dying during or within fourteen days after treatment had been commenced.

The figures for 1895, just to hand, show that the total number of cases for the year was 1,520, of which only two died, representing a mortality of about one-eighth per cent. In all 17,334 have been treated since the commencement, with 80 deaths. At the low calculation that 1 in 7 would probably have died, there is a saving of life equal to 2,396 lives at the Paris Institute.

The next important advance in our knowledge was made when Salmon demonstrated that an animal could be rendered immune by the injection of gradually increasing doses of the *chemical* substance manufactured by the bacilli without the injection of any living microbes.

It was at once recognised that this was, after all, the basis

of Pasteurism, as it had become evident that the large doses which Pasteur had administered in the later stages of the treatment of hydrophobia could contain no living germs, but simply were lethal doses of the chemical substance or poison secreted by the microbes.

Chemical vaccination, in contradistinction to *vital* or protein vaccination, was thus demonstrated to be practical, and gradually it was established that there is no essential difference between the process of immunisation or protection by means of injections of the chemical poison or by small quantities of the living bacilli.

It was soon proved that the animal so protected by either or by both methods was also protected against lethal doses of the pure chemical substance, as well as against lethal doses of cultures of the living bacilli, or, as put by Kanthack, "Immunity, therefore, implies resistance against the bacteria and their products."

By these results, and the knowledge gained during their progress, the way was gradually opened up for the brilliant discovery of Behring. He had found that by injecting gradually increasing doses of the living cultures, or of the chemical poison or toxin of diphtheria, into animals, they were easily rendered insusceptible to the disease—in other words, Behring proved by direct experiment that Pasteurism applied to diphtheria as well as to anthrax and other diseases; but he fortunately went two steps further and discovered that the blood serum of the protected animal contained chemical substances developed (during the immunisation), which had the power of protecting or immunising another animal if injected into its tissues.

This result was found to be true not only in the case of diphtheria, but experiment proved that similar results were obtained with other infective microbes, so that all bacteriologists accept without reservation the law now known as Behring's law—"That if an animal has been artificially pro-

tected against a particular infective agent, its blood or serum acquires the power, when injected in sufficient quantity into another animal, of directly transmitting an immunity from that agent" (Kanthack).

Behring's final step led to his discovery that the serum or antitoxin was not only *preventive* but *curative*, and that its administration to an animal or to man already infected with the original microbe possessed distinct antidotal powers.

If we seek for an explanation or working hypothesis for these indisputable facts we enter into the mazes of speculation; and it was in this way that some theorists who had not closely followed the experimental proofs were led at first to doubt the value of serum-therapy.

What is the nature and whence the origin of the so-called "antitoxin," found in the serum of protected animals, remain still to be proven.

In all probability it will be demonstrated to be a *vital* product of the living cells of the animal, secreted during the progress of immunisation.

Fraser has within the past few weeks started the theory that as regards snake-bite antitoxin "protection or immunity is chiefly due to the accumulation in the blood of an antidotal substance, and that this substance originates at least in part *from the venom* itself, and is *normally one of the constituents* of the venom."

Buchner had formerly promulgated the same view regarding the antitoxin of diphtheria. If this hypothesis be true, that the antitoxin is derived from the toxin directly, it must have some power of reproducing itself, or of acting as a ferment, because when a horse is prepared for yielding antitoxin, his serum is found to be as strong in antitoxic power after the second bleeding as after the first, though no poison has been administered in the interval. It is, therefore, highly improbable that this view is correct. It is denied by Calmette. (It may receive some weight at first sight from the fact that it has been found

that the antitoxic or antidotal power of the serum is in direct proportion to the dosage of the animal by the toxin or cultures, but much higher valued serum can be produced by a series of small doses than by the same amount of toxin injected at once).

It is worth reminding you in passing that there is a difference in the immunising power as distinguished from the antidotal power of serums prepared after dosage of animals by toxin and by living cultures.

It is, however, of more importance to consider how the serum acts—how does it produce immunity or exercise its antidotal powers in disease? Those in a position to express a verdict upon the question appear to be divided between two views.

One is the *chemical* view, and receives support from the experimental fact that enormous quantities of the toxin or chemical poison produced by certain bacilli can be neutralised by small amounts of the protective serum added in a test tube, the resulting mixture or chemical compound proving to be harmless when injected into susceptible animals. Behring himself likened this result to the combination of an acid and an alkali forming a neutral salt. Other authorities, however, reject the *chemical* theory and maintain that the explanation lies in some *vital* cellular change rapidly following upon the injections.

The action cannot possibly be explained by the supposition that the serum acts as a poison to the bacilli as corrosive sublimate does, because it has been demonstrated that the bacilli may be cultivated in their respective antitoxic serums; though it is certain from numerous experiments that when the bacilli and serum are injected into an animal the microbes cease to grow and are speedily, with their products, destroyed or rendered innocuous.

Experiments have demonstrated that a potent serum can be obtained from the blood of animals injected by small doses

of the active poisons found in the castor oil seed and in jequirity, so that animals can be immunised or protected from these toxalbumins.

The value of the serum-therapy of diphtheria can only be realised by *forgetting* for the moment the various theories which are being almost daily promulgated with the view of explaining the results obtained, and by remembering the numerous experimental facts accumulated within the past two years. To do so one must glance at the facts as proved and accepted about the pathology of the disease itself. There are still a few facts to be made out about diphtheria, but I do not think that I am overstating it when I say that there is probably no other diseased condition about which we know so much, no other affection whose ætiology and pathology have been so completely worked out. This is to a large extent owing to the original researches made in connection with the perfecting of the serum-therapy of the disease.

Kanthack, in Allbutts' System of Medicine, states—"The Klebs-Löffler bacillus is found in every case of diphtheria, and from the results of investigations made all over the world we must refuse to call any lesion diphtheria unless it is associated with that bacillus; conversely, any morbid process accompanied by this organism is diphtheria." We possess in this organism of Klebs-Löffler a certain test. At the present time we frequently hear that typical bacilli have been discovered in cases which clinically are not diphtheria, our clinical notions must then be amended and our position reconsidered. The bacillus asserts itself with an authority which must put aside any preconceived notions.

Sidney Martin defines diphtheria as a membranous inflammation of a mucous membrane, usually of the respiratory passages, due to the invasion of this bacillus. It does not enter the body, but forms poisons in the membrane, which produce the fever, &c., and characteristic palsy, and he insists upon the importance of the presence of nerve-

degeneration as the final and most accurate test of the presence of the bacillus of diphtheria.

Recently the bacilli have been found in fatal cases in the blood, lungs, and other viscera; but it nevertheless remains true that in the great majority of cases the microbes remain outside the body or blood, and as they grow the poisons which they secrete are absorbed, and produce the asthenia, fever, syncope, paralysis, and death, met with in all typical cases of the disease. This has been thoroughly demonstrated by experiment, and since the nature of these poisons is of great practical importance, it will be necessary to refer at some length to the brilliant discoveries of Martin, who was the first pathologist who demonstrated that the poison or *toxin* of each bacillus was *specific*, as others before him had proved that the microbes themselves were specific in their action. In the same way it has been proven that the antitoxins are specific.

Martin found two poisons. One he extracted from the diphtheritic membrane as a precipitate; it produces, in one single infinitesimal dose, paralysis and death in the rabbit, preceded by wasting, diarrhœa, and fatty degeneration; it reproduces the symptoms and pathological changes found in diphtheria after one single dose which is almost invisible, and this renders it highly probable that it is a *ferment*.

Strange at first sight, it must appear, that this poison, which is the chemical representative of the Klebs-Löffler bacillus, is not found in the blood and tissues of animals or men dying from diphtheria. There, another poison has been found by Martin, which is an *albumose* or digested proteid. Injection of this poison, which chemically resembles the albumoses found in the healthy stomach during digestion, produces rapid rise in temperature, and *repeated* small doses finally cause all the usual characteristics of diphtheria, including the nerve and cardiac degeneration. Martin's view is that the bacilli growing in the membrane produce

the toxin or ferment poison, which is absorbed into the blood, where by acting upon the proteids of the body it forms the albumose poison, which is thus a product of its digestive action. The proof of this view is highly interesting; both poisons can be manufactured outside the body by cultivating the bacillus in various ways. Thus, if the microbes be grown in the ordinary alkaline meat-broth, with a little salt and peptone, the toxin or ferment poison is produced, and its injection produces the symptoms previously mentioned, one dose being sufficient. But if the microbes be grown in alkaline broth, to which a little alkali albumen has been added—if, for example, the culture medium, first introduced by our distinguished pathologist, Dr. L. Smith, be employed, the alkali-albumen is digested by the Klebs-Löffler bacillus, and the product is the *albumose* poison, which produces, after repeated small doses, the fever *plus* all the symptoms and pathological changes found in diphtheria. Hence the conclusions arrived at by Martin may be accepted as proven, and their value in clearing up the pathology and in giving indications for the use of the antitoxic serum in diphtheria is obvious. To quote his own words—"For these reasons the Bacillus diphtheriæ is the cause of diphtheria. It is found in the membrane, it can be separated from the membrane, and when grown in suitable media outside the body it forms poisons which have the same physiological action as those present in the membrane and in the tissues of patients dead of diphtheria."

The pathological process he regards to be the following. When the membrane is formed the bacilli growing in it, especially near the surface, secrete a ferment which when absorbed into the body, produces, by acting on the proteids of the body, digestive products, the chief of which belongs to the albumose class. It is not that the body is poisoned by a single large dose and then the action stopped (although this may occur in certain cases), but it is that numerous small

doses are in the course of the disease absorbed into the system, and are gradually producing their effects.

I omit to dwell upon an organic acid which is found in the blood and tissues; it has similar but much weaker action than the albumose poison, and it evidently plays a very unimportant part.

There *may* be some reservation in accepting these results, which seem to prove that the Klebs-Löffler bacillus manufactures first a deadly ferment or enzyme, which in its turn manufactures an albumose poison which infects or poisons the tissues. It is just within the limit of possibility that the bacilli secrete the poison directly without the intervention of the ferment, as former observers believed, and if these researches of Martin be doubted, or even disproved (though I think this highly improbable), the conclusion now universally accepted must remain unshaken—that diphtheria is caused by a poison absorbed into the system, and that the specific origin of the poison is the Bacillus diphtheriæ.

Those who have made frequent bacteriological examinations of the *healthy* throat, fauces, and buccal cavity, have found about a dozen different micro-organisms, generally maintaining a quiet, harmless existence there. Some of these may be often seen in conjunction with the diphtheritic microbe in cultures made from the false membrane in disease. Nearly always present in such cultures are streptococci and staphylococci of various kinds, and it is a difficult question how far their presence influences the course of diphtheria. They certainly answer for some of the complications, and explain the septicæmic types of the affection, and it has been suggested that the specific antitoxic serum for these pyococcal microbes should be administered along with the specific diphtheritic antitoxin, and the suggestion has been successfully put into practice.

We shall now pass on to the consideration of a few of the experimental proofs of the value of the antitoxic serum.

A culture is made on broth, gelatine, or agar of the pure bacillus, and filtered so as to contain nothing but the toxin; the potency of this will depend upon the nature of the nutritive medium and the length of time it has been incubated. Roux, at the Pasteur Institute, prepared in this way a pure toxin, of which ·1 c.cm. always killed a 300 to 400 gramme guinea-pig in about 36 hours. After the injection of this dose (=about $1\frac{1}{2}$ minims) a tumour appears in about 20 hours at the site of the injection, and in 12 or 16 hours more the animal dies, and its organs afford proof of the identity of the poison with that of human diphtheria. If a much smaller dose be injected into another healthy guinea-pig, or if the same dose of the toxin, attenuated by heat or chemicals, be injected, a trifling tumour appears, and in a few days the animal is found quite healthy; larger doses can then be administered, and soon it is found that it bears many lethal doses with impunity, and eventually it is proved to be protected against enormous doses.

If it be now bled the serum of its blood contains the antitoxin of a strength proportionate to the amount and frequency of the toxin administered.

Behring's method of determining the antitoxic value of serums was to mix them in varying quantities with ten lethal doses of toxin, and then to administer the mixture to guinea-pigs of 300 grammes weight. When he found a serum of which 0·1 c.cm. mixed with ten lethal doses could be injected into a guinea-pig without the slightest harm he labelled this serum as possessing one immunising unit.

He was able to protect animals to such a degree against diphtheria that $\frac{1}{15000}$ part of 1 c.cm. (= nearly $\frac{1}{10000}$ part of a drop) of their serum mixed with a fatal dose of diphtheritic toxin, when injected into a guinea-pig, produced no effects whatever. The same dose without the serum always killed the control animal.

Klein, commenting upon these marvellous results, states—

"I venture to say that nothing can be found in the whole range of experimental pathology or pharmacology which offers clearer or more striking results than these experiments."

Klein repeated these experiments, only he used living cultures instead of the dead toxin, and by mixing the living bacilli with the antitoxic serum before injecting he obtained similar results.

He thus summarises the results of an overwhelming number of observations made by competent observers by stating that the Klebs-Löffler bacillus is the true cause of diphtheria; that the experimental evidence of this is sufficient; and, further, that the nature and effect of the specific toxins produced by the bacilli in the culture and in the human body are the same; that also the appearance of post-diphtheritic paralysis producible in animals by the toxins or by injection of living culture is the same as that occurring in man after diphtheria. Such being the case, the application of the serum of animals in which a high degree of resistance against diphtheria has been artificially produced to the treatment of human diphtheria must be obvious. He winds up his remarkable paper, read in 1895 at the annual meeting of the British Medical Association, by stating—"One thing cannot, I think, be gainsaid—namely, that the scientific basis for the application of antitoxic serum is as firmly founded and as thoroughly established as the use and application of any known drug."

The *experimental* evidence of the value of the antitoxic serum when injected as an antidote to the toxin of diphtheria must in the case of animals be regarded as conclusive and the problem as proven.

We must next seriously consider in how far are these experimental results comparable to the phenomena which are to be met with in dealing with diphtheria in the human subject.

In one respect they are widely different, and upon this

serious difference depends the issue of serum-therapy. I have mentioned that the bacteriologist mixes an enormous dose of diphtheritic toxin with an almost invisible amount of the harmless serum in his test tube and injects the mixture into a healthy rabbit or guinea-pig and no results follow. If the problem of treating diphtheria in the human subject could be reduced to these simple lines we might safely affirm that no person need ever die of the disease. In the first place it is obvious that the physician has no means of determining the amount of the toxin which has already found its way into the patient's blood, and if many times the lethal dose has been absorbed, experimental research in animals has proved that the case is hopeless. There are, therefore, limits to serum-therapy, and a consideration of these limits are of vital importance before we can hope to use the antidote with success.

It has been seen that the bacillus grows upon the surface of the mucous membrane and that its poison is gradually absorbed, the patient being in the position of hourly receiving numerous small doses of the toxin before his danger is even suspected—a condition differing widely from that which maintains in the test tube experiments previously mentioned.

Before applying the serum to the treatment of the disease in man Behring first produced artificially in animals a condition closely resembling if not identical with that which exists in human diphtheria by injecting numerous small doses of the toxin without any previous admixture of the serum *in vitro*. A few of the results may be mentioned. An animal was injected with the minimum lethal dose of the toxin, and at the same moment an injection of the serum was given in some other part of its body. It was found that the dose of the serum necessary to save the animal under these conditions was more than 100 times the quantity which was necessary to save it had the serum and the toxin been previously mixed together before injection.

The next series of experiments closely imitated the conditions present in human diphtheria.

The minimum lethal dose was injected into an animal and thirty minutes allowed to elapse before the serum was administered; the dose of the latter necessary to save the animal was found to be 200 times greater than that used in the test tube experiment.

Fortunately it has been proved that if double the lethal dose be given to an animal and serum be injected 30 minutes later it does not require such a relatively large dose to save the animal—viz., the amount necessary will fall far short of 400 times the test tube amount, but Professor Fraser insists upon the importance of noting that if the dose of toxin considerably exceeds the minimum lethal dose, possibly for most toxins, when it is as large as 3 times the minimum lethal, there are probably no existing antitoxins that are capable of preventing death in any conditions encountered in practice. I mention these later experiments, for in them the key-note to treatment is to be found. It is obvious that the whole success of serum-therapy will turn upon this "time" difficulty, and the facts demonstrated in the laboratory receive striking corroboration by a study of the published results of the success of the treatment in the human subject.

It will be seen how securely, stone by stone, the foundations of serum-therapy had been laid before the new system was to be tested in practical medicine.

When we come to examine the results of the treatment, as published within the past two years from all parts of the world, the evidence of the success of the antitoxic serum appears to be overwhelming, and I feel that the greatest difficulty of my task is approached when I attempt to deal with this aspect of the subject. The materials are almost limitless.

Statistics are liable to many fallacies. Outbreaks of diphtheria are of very unequal severities, and the mortality varies very much consequently.

Age influences mortality greatly, and locality has been found to influence the death-rate to a surprising degree; thus the death-rate from the disease on the Continent has been much higher than at home.

Up to the end of last year I collected the available figures from all countries; striking an average I arrived at the conclusion that it was probable that the mortality was reduced to at least one-half what it had been before the introduction of serum-therapy. This rough plan is open to serious objection, as no attempt at classification regarding age, duration of disease before treatment, &c., could be attempted when dealing with many thousands of cases, but it quite served the purpose for which it was intended—viz., to give a clear and certain indication of the direction in which the mortality curve was then moving. It was also apparent that the diminution was greatest where the mortality was previously very high, and that at home the influence of the antitoxin on the death-rate was slight compared with places like Paris, Berlin, and Munich, where the mortality had been found to be reduced much below 50 per cent. of what it had previously been. It has been suggested that these latter results may be explained by the fact that the dose of antitoxin used on the continent is much larger than that employed as a rule in England last year; but I was also satisfied from a perusal of the reports that a factor of even greater importance was present—viz., that the continental physicians injected the serum immediately on seeing the patients, and it appears probable, from reasoning upon the greater gravity and prevalence of the disease abroad, that the patients seek hospital advice at an earlier stage. Many physicians at home seem to inject the serum only in the exceptionally severe cases, and many of these must be regarded as hopeless. It is clear that figures which are mainly concerned with such cases, when compared with an equal number of all round cases, treated by the older methods,

will give results which place the success of serum-therapy at serious and unfair disadvantage. These are but a sample of the fallacies which beset the question of statistics; however, if we confine our study to figures occurring in the practice of one hospital or one physician of eminence most of the fallacies can be eliminated.

Professor Baginsky, of the University of Berlin, reported last year that he had treated 525 cases of diphtheria with serum. His mortality for all ages was 15·6 per cent.; his mortality was previous to the serum treatment 41 per cent.

An analysis of his ages shows most marked results:—

Under 2 years, previous mortality was 63; now 25 per cent.
From 2-4 „ „ 52; „ 17 „
„ 12-13 „ „ 13; „ 13 „

During two months of the treatment no serum was available, and 126 cases were treated without it; the mortality was 48·4 per cent. On commencing the serum the mortality fell to 15·6 per cent.

Professor Ranke, of the University of Munich, treated last year 163 cases of primary diphtheria with a mortality of 17·7 per cent. The bacillus of Klebs-Löffler was found present in all these save 9. He gives the mortality for the 8 years prior to the serum treatment, and it varies from the lowest, which was 42·2 per cent., to the highest, which was 57 per cent., the average for the 8 years being 48·8 per cent. His figures show the remarkable efficacy of the serum when resorted to early. The following was the mortality in the cases according to the days of the disease upon which the treatment was commenced:—

5·2 per cent. in cases treated on the 1st day.
8·5 „ „ „ 2nd „
17·9 „ „ „ 3rd „
15·8 „ „ „ 4th „
11·1 „ „ „ 5th „
40· „ „ „ 6th „
46·6 „ „ „ 7th day and later

He states—"What seems to me to prove the value of the serum treatment, even more than these statistical figures, is the change in the clinical course of the disease—it loses its progressive character. I have not had a single case in which laryngostenosis developed itself after injection if symptoms of it had not been present already on admission." In 27 cases of undoubted diphtheritic croup the symptoms subsided after the injection.

With results such as these the profession was not prepared for the Report of the Metropolitan Asylums Board, which appeared in the newspapers in April last. The *résumé* of the results gave a mortality of 28·1 with the serum treatment, as against 29·6 with the older methods.

When the details were published it was found that only the severe cases were subjected to the serum, and in order to make the figures comparable the mild cases not treated with serum were included in the figures for the year; this gave a mortality of 22·5 per cent. for the serum year, against 29·6 for 1894.

It cannot be denied that this is a comparatively small decrease, but I have gone into the figures and find that this fall in the mortality represents 248 lives.

Several serious weak points may be observed in looking closely into the Report; thus only 61 per cent. of the cases were injected with the serum, and only those which appeared to be severe received the injections on admission. The *British Medical Journal* points out that amongst the numerous hospitals under the management of the Board cases were admitted as mild which afterwards, in all probability, became severe and were injected at a period which would give much less satisfactory results. The method of administering the serum in the various hospitals is open to grave difference of opinion. The reporters state—"That the best results may be obtained by giving a dose of 1,000 Behring's immunising units every 12 hours for the first 24, 36, or 48 hours, accord-

ing to the gravity of the case, and if necessary a subsequent injection of half the amount daily for such time as the exudation may remain adherent." These principles of dosage will be found to be at variance with those established by the *experimental* researches of Behring and others. Those researches proved that when possible it was necessary to introduce the required number of units at a single large dose.

The practice of the physicians of the Asylum Board will thus be seen to be also at variance with that of the continental professors whose results have just been mentioned. Considerations like these justify one in hoping that the mortality in the various hospitals under the control of the Board will show next year a still further reduction, and will prove the opinion to be correct which they have stated in their Report—viz., "That in antitoxic serum we possess a remedy of distinctly greater value in the treatment of diphtheria than any other with which we are acquainted."

The Reports bring out very unmistakably a fact insisted upon by Behring and other continental authorities and emphasised in the results obtained by Ranke. Of all the cases of diphtheria which in 1894 were admitted to the hospitals on the first day of the disease the mortality was 22·5 per cent. In 1895 under the serum, the mortality of these cases fell to 4·6 per cent.; of second day admissions the mortality fell from 27 to 14·8 per cent.

Through the kindness of Sir Joseph Lister I have just received a copy of the Asylum Board's Report. It contains some 80 tables of figures bearing upon the diphtheria statistics, and I find on closely examining these tables some startling proofs of the efficacy of the new treatment. One of these proofs I shall briefly point out. If we examine Table VII., page 116, we find that there were 86 patients in all the hospitals who were admitted and received injections upon *the first day* of the disease; of these 4 only died (mortality 4·6). These cases obviously were all more or less serious.

By scrutinising Table XIV. we learn that 128 cases altogether (mild and severe) were admitted on the first day of the disease; this number includes those injected and those apparently so mild as not to require injection. Of the 128 cases 15 died. By subtracting the 86 severe cases under serum treatment, with their 4 deaths, we find that 42 patients were admitted on the first day with symptoms so mild that it was not considered necessary to resort to serum treatment, and the mortality amongst these amounted to no less than 26·2 per cent. In other words the mortality in the obviously severe cases under the serum treatment is 4·6 per cent., whilst the mortality in the apparently trivial cases becomes 26·2 by withholding the injections.

The reporters append a most striking statement from the authorities in their Northern Convalescent Hospital, where convalescents from scarlatina were admitted from the six hospitals.

Post-scarlatinal diphtheria developed in these patients in 119 cases, and under serum treatment, applied at once, there were 4 deaths, or 3·3 per cent. In the average of the three preceding years 119 patients had a mortality of 63 per cent. I feel that any comment of mine upon these marvellous figures would only lessen their weight, but I cannot refrain from pointing out that they appear to afford the most conclusive of all the evidences yet produced of the truth of the theory upon which serum-therapy is founded. They demonstrate that the early recognition of the disease as it occurred in hospital under the eye of the physician could be met by injections of an antidotal nature which reduced the mortality from 63·0 to 3·3 per cent.

Following this important Asylums Board Report come the *Vital* Statistics of Diphtheria, compiled by Dr. Dixey, who states his belief that the present low mortality in London is owing to the serum treatment. He finds that the case mortality for the whole of London is now at the lowest point ever

recorded—viz., under 20 per cent. The last statistics which have appeared are those of the American Pediatric Society. They include Reports of 5,794 cases investigated by the Society; the mortality was 713, or 12·3 per cent; of these 218 were moribund at the time of the injection, or died within 24 hours. Excluding these, the total mortality amounts to only 8·8 per cent. This Report agrees with all the former ones from Europe in proving that the mortality was lower the earlier the injections were made; thus, 4,120 cases injected in private practice during the first three days of the disease, excluding moribund cases, resulted in a mortality of only 4·8 per cent.

After the third day the mortality rose rapidly, and did not differ materially from ordinary diphtheria statistics. The Report states—"Our figures emphasise the statement so often made that relatively little benefit is seen from antitoxin after three days. However, it must be said that striking improvement has in some cases been seen, even when the serum has been injected as late as the fifth and sixth day. The duration of the disease, therefore, is no contra-indication to its use." In about two-thirds of the series the presence of the bacillus was demonstrated, and in the great majority of the cases only one injection was given, and, as a rule, the dose was smaller than is now considered advisable.

I have, at the risk of wearying you, gone into the statistics of the serum-therapy of diphtheria rather than detain you with a detailed account of my own personal experience of the treatment, which is so small as to fall short of a score of cases, which I have seen with my medical brethren in consultation. It is folly to draw any conclusions from such an experience, but limited as it has been, it has enabled me to feel that at least 3 of these patients would have died but for the serum, and it has prepared me for the marvellous results which have been chronicled by others.

With the remarks of Dr. Washbourn, Physician to the London Fever Hospital, no one can disagree who has given any attention to the new treatment. He states—"In reading the literature of the subject I have been struck by the fact that almost every observer who has had a large experience of diphtheria speaks in the highest possible terms of the value of the remedy; whilst criticism has come from those who have had only a slight experience of diphtheria or little personal experience of the antitoxin treatment." Reliable statistics of more than 20,000 cases have now been published, and the flow of Reports is probably somewhat checked, as the case is now regarded almost universally as *proven*. Some difference of opinion may still exist regarding the effect of the serum upon certain symptoms and sequelæ. The majority of observers agree that in the vast bulk of cases treated by the serum a general improvement in all the symptoms sets in rapidly.

The false membrane ceases, as a rule, to extend, and generally speedy disintegration of it begins. This is evident also in those cases where laryngeal symptoms have become obvious and are deepening, and the evidence is overwhelming that the serum often prevents the necessity of tracheotomy.

Upon the heart, in a few cases, the remedy has certainly appeared to cause depression, but in the vast bulk of the severe cases its action on the circulation has been beneficial.

Upon the fever heat it would appear to act somewhat after the manner of the new antipyretics; where the temperature is only slightly elevated the serum seems to have little effect, but where it is high a rapid fall sets in.

It is very doubtful if any action upon the kidneys follows the injection of the remedy, and it must be remembered that the injections are often administered where the kidney is already suffering from the toxic effects of the diphtheritic virus. The great majority of observers deny that the serum has any deleterious action upon the renal organs. Fatal

nephritis occurred only 15 times in the 5,794 cases of diphtheria treated by the new remedy in the American statistics.

A very important question is that of the effect of the serum upon the occurrence of paralysis; this cannot be satisfactorily answered at present as this symptom often does not show itself till after the patient has left hospital for some time. Most observers believe that where the injections are given early there is less chance of paralysis supervening. Probably the view of Goodall and Washbourn is correct, that as this symptom is more likely to occur in severe cases, if the serum saves such cases by tiding them through the membranous stage, they expect that statistics will ultimately prove that the percentage incidence of paralysis will become higher in the survivors, for we must not forget that many fatal cases would probably have developed paralysis had they recovered from the effects of the disease in the throat.

A few (two or three) sudden deaths have been reported as occurring soon after the injection of the antitoxin. The test case is the sad one where the antitoxin was injected as a preventive into the healthy child of Professor Langerhans. The event was so clearly the result of the injection that too much attention could not be called to it. Up to this accident the serum was regarded as harmless.

In last month's *Therapeutic Gazette* a statement appears in the leading article about this case:—"It has been explained by the fact that the child had just completed an unusually heavy meal, and that in the attempt to vomit during the faintness following the injection, he drew into his air-passages some of the contents of his stomach, with resultant asphyxiation." In the 6,000 American cases death was supposed to be caused or hastened by the injections in three cases, but an analysis of the cases does not appear to warrant the suspicion. I cannot find a single instance where any serious results have followed the injection of antitoxic serum in animals.

Joint pains, and the characteristic erythematous eruption which so often follows, soon pass off and may be disregarded, though the rash be followed by some pyrexia.

All the serums as yet produced in the liquid form deteriorate, and this so rapidly and to such an extent that in many cases a worthless liquid is injected. Serum should be kept in the dark, and in a very cool place, in sealed bottles.

In Belfast there should be found a chemist with sufficient enterprise to keep a stock of liquid serum in a good refrigerator, and from him physicians could get the remedy fresh as required both for town and country.

The dried serum, if found perfectly reliable, may dispose of this serious difficulty as regards fresh supply, but at present its relative value to the liquid has yet to be proven. It is interesting to note that the cutaneous inconveniences are seldom found to follow after its use, and by making a strong solution of it, the bulk of the injection is much lessened, and the operation appears to the patient to be less formidable, as a much smaller syringe may be employed. Upon the other hand, some authorities affirm that the serum cannot be reduced to the dry state without injury to its virtues, and, as far as I can learn, the Continental authorities use the liquid form.

It is needless to state that the strictest antiseptic precautions should be taken, and the syringe used should be one capable of sterilisation by boiling. A weak sublimate, or 1 in 20 carbolic lotion, must be freely applied after soap and water cleansing; and the subcutaneous tissue of the flank is the most convenient site for injecting.

In the Asylums Board Reports the rash appeared in 45·9 per cent. of the cases; joint pains in 4·7; pyrexia, with or without rash, in 29·6; and abscesses at the site of injection in 2·3 per cent.

The *dosage* is of vital importance, and the numbers of different serums in the market of different strengths have

led to some confusion. All serums should be sent out in doses containing 1,000 or 2,000 immunising units, regardless of the actual bulk of the serum, as in the case of the remedy prepared by Dr. Sims Woodhead.

The American Committee recommends for all severe or larnygeal cases that a dose of from 1,500 to 2,000 immunising units should be given to a child two years old in the first injection, this to be repeated after 18 to 24 hours. The Asylums Board reporters, as already stated, recommend only 1,000 units every 12 twelve hours.

In the selection of a serum the rule should maintain that the stronger it is the better.

A very interesting paper upon the processes for preparing the serum appears in the *B. M. J.* for October 3rd, by Bokenham, who gave a practical demonstration before the Pathological Section of the British Medical Association. He cultivates the diphtheritic bacillus on the surface of bouillon in undisturbed flasks for three weeks at a temperature of 37° C. The culture on being filtered through sterile porcelain yields a toxin, which is fatal to small guinea-pigs in doses of 1 to 5 cgs. (*i.e.* less than half a minim).

He selects young thoroughbred horses for the preparation of the serum, and these are injected at first with about 4 or 5 minims of the toxin. As the dose is steadily increased, and its bulk becomes larger, he injects it directly into a vein. At the end of three or four months the horse is bled, and its serum is generally found to contain 500 to 700 units in every 10c.cm. A fair dose of such serum would, therefore, measure about five fluid drs.; and, upon being standardised by Behring's method, experiments on guinea-pigs should demonstrate that $\frac{1}{600}$ part of a gramme (*i.e.* $\frac{1}{40}$ of a drop) of this serum should certainly protect a guinea-pig against ten lethal doses of the diphtheritic toxin. After this testing of the serum, it is filtered under the pressure of liquefied carbonic acid gas, and preserved in dark-coloured sealed bottles.

I fear that my necessarily imperfect, and in many respects fragmentary paper has already extended beyond the limits of your patience. The mass of overwhelming and absolutely conclusive evidence may seem to many of you, who have closely watched the progress of events, to have long since proved the value of this new treatment for diphtheria. If any of my audience have not had the opportunity of watching the development of the new method, I trust this *résumé* of its results may be helpful—not only in establishing the superiority of serum therapeutics over every other treatment of diphtheria, but in stamping upon the minds of all the great importance of resorting to it at the earliest possible moment in all cases except the most trivial, always remembering that it in no way need interfere with the older plans of local and constitutional drug therapeutics. I have not dealt with the isolated statements of the few who profess to believe that the case is still unproven. They are those who, as a rule, have the least experience of the disease; but after the facts which I have read you will be able to form your own opinions about the statement of one writer who cannot be considered as deficient in practical experience. Henning, of Königsberg, declares that he did not find the Klebs-Löffler bacillus in 50 per cent. of the cases of diphtheria which he investigated, and only in some of these was the disease clinically diphtheria, and he denies that the serum-therapy has given the best results. He affirms that with lime-water and an iced cravat he has treated nearly 2,000 cases of diphtheria with a mortality of 3 per cent. Leaving serum-therapeutics out of the question, you can judge from your own experience if this writer has been treating the disease of which we have been thinking.

In conclusion, I find that I must postpone till a future meeting the consideration of the serum-therapy of tetanus, snake-bite, and other diseases.

In the case of tetanus the *experimental* evidence is

astounding. An animal may receive many thousands of times the lethal dose of the tetanus toxin and be saved with certainty by injecting the serum immediately afterwards; but when we come to apply the serum to the tetanus occurring in man the case is widely different. The microbe has many days' start, and the patient's blood is charged for a long time with the toxins which the microbes have been steadily manufacturing during the long period of unsuspected incubation. To meet such a condition a serum of 1 to 1,000,000 immunising power must be employed, and though it is claimed that the mortality has been reduced by a half through the use of the serum, the cases are far too few to establish the serum-therapy of tetanus. More promising results may be expected from serum-therapy in snake-bites, and the experimental researches in this subject read more like a chapter in the "Arabian Nights' Entertainment" than a sober record of scientific truths.

ART. II.—*Note on a Successful Case of Disarticulation at the Hip-joint; with Observations on the Method of Operating.* By R. GLASCOW PATTESON, M.B. Univ. Dubl.; F.R.C.S.I.; Surgeon to the Meath Hospital and Co. Dublin Infirmary; Late Surgeon to Extern Department, St. Vincent's Hospital.

THE gravity of the operation of disarticulation of the hip is recognised by all surgeons; so much so that in the hands of some it is never practised. This gravity depends mainly on two conditions:—1. The shock incident to the removal of such a large and important part of the body; and 2. The danger of hæmorrhage from the great and numerous vessels which surround the joint. If it can be shown that either of these factors is an exaggerated quantity the operation will undoubtedly be placed on a better footing; and such is my object in recording a brief note of the following case:—

Thomas H., aged fifty-two, a farmer, was admitted to the Meath Hospital on the 2nd September, 1895, suffering from a large, ragged ulcer in the middle third of the thigh, embracing its anterior and outer portions. This ulcer was the result of a burn from which the patient had suffered some years previously, and of which he gave the following history:—Ten years ago he received a very severe burn, the greater part of the skin on the outer aspect of the thigh being involved, from just below the crest of the ilium to a point slightly above the external condyle of the femur. With the exception of a small spot about the middle third of the thigh the burn healed up, and gave rise to no further trouble, except that this spot had to be continually dressed. About ten months ago the spot began to enlarge and became exceedingly painful, so much so that the patient could obtain rest neither by night nor by day. He lost flesh steadily, emaciating rapidly, the ulcer meanwhile extending gradually in size and assuming a warty, ragged condition, with an extremely fœtid discharge. This combination—of pain and fœtor—along with the gradually-increasing weakness and inability for work, finally led him to seek relief.

On admission a ragged, excessively fœtid ulcer, about the size of a saucer, was found occupying the site of the scar, and a considerable portion of the previously healthy tissues, in the middle third of the thigh. The edges were raised and indurated, warty and irregular; the floor was nodular and firmly fixed to the deeper underlying tissues; and the surrounding parts, especially the scar tissue, were for a considerable extent infiltrated by the new growth. So extensive was the disease that the only hope lay in amputation through the hip-joint; and so severe was the pain and so distressing the fœtor, that the patient readily acquiesced even in this extreme proposal. Accordingly, after consultation with my colleagues, I proceeded on September 13th to disarticulation through the hip-joint. Sir Philip Smyly and Sir William Stokes assisted me. The bleeding was simply and effectively controlled by means of a rubber tourniquet fitted with Porter's boxwood clamp. The clamp was laid over the external iliac artery, just above Poupart's ligament, and one end of the elastic band was then brought round the perinæum, meeting the other end just below the crest of the ilium, where they were crossed, the second end being then brought round by the perinæum meeting the first in the clamp over the iliac vessels. Slipping was prevented by two ends of bandage placed below the tourniquet in front and behind, which being turned back and passed behind and before were then tied above the crest of the

ilium on the opposite side. In this way the operation was rendered practically bloodless.

Disarticulation was effected as follows, the method employed being a modification of that outlined by Sir Joseph Lister in Holmes' "System of Surgery" (Vol. III., p. 721), and more fully described by Mr. Treves in his "Manual of Operative Surgery" (Vol. I., p. 532):—An incision about eight inches in length was made along the outer edge of the femur, commencing at a point about an inch above the upper margin of the greater trochanter, so as to avoid as far as possible the branches of the gluteal and sciatic arteries, and terminating just above the limit of healthy skin in the neighbourhood of the ulcer. This incision passed completely down through the periosteum to the bone in its entire extent. Two divergent lines were then made, arising from a point slightly above the termination of this incision, so as to encircle the limb at the lowest possible point above the limits of the disease. This included in depth only the skin and subcutaneous tissues down to the deep fascia, and served to map out, when retracted, the point at which the division of the muscles was subsequently to take place. The muscles attached anteriorly to the great trochanter were then dealt with; next those above; and lastly, those posterior; the last to be divided, and the only one presenting any difficulty being the obturator internus at its insertion into the digital fossa. The limb being now strongly abducted and rotated outwards, the capsule of the joint was opened on its anterior aspect, the ligamentum teres divided (after some trouble owing to its unusual shortness), and the head of the bone then turned outwards. The inner surface of the bone was now cleared, including the attachments of the shorter adductor muscles; and it was then easily freed down to the level of the skin incision, where a final sweep of the knife through the muscles completed the separation. The vessels exposed and requiring ligature, besides the superficial and deep femoral vessels, were few in number and easily secured; and the surface left after the operation was a practically bloodless one. Deep and superficial sutures were inserted and the wound dressed in the usual manner. Sterilised silk was used in all cases.

Troublesome vomiting, lasting for thirty-six hours, was the chief feature following the operation, with partial suppression of urine. The wound healed for the most part by first intention, except the inner angle where some pouching took place, and after a few weeks one or two of the silk ligatures used came away, the wound then speedily closing up. Recovery was uninterrupted, and the tempera-

ture showed an absolutely aseptic course. Owing to my leaving a week after the operation through illness these clinical notes are rather vague, and the subsequent treatment devolved mainly on Dr. Robert P. Lyle, our then House Surgeon, and Sir William Stokes, who very kindly took charge of the case; and to them the credit of a successful result is largely due.

The tumour was a typical epithelioma, developing in scar-tissue. A feature of interest in the case was the occurrence of some enlargement of the femoral lymphatic glands previous to the operation. At the time of amputation I did not feel sufficiently fit to proceed to any further operative procedure, and these glands were left to be dealt with on a subsequent occasion. Such procedure the course of events showed to be quite unnecessary, and the glands, which were only the seat of sympathetic irritation, completely disappeared. The patient was shown at the Surgical Section of the Royal Academy of Medicine on November 13th, 1896, exactly fourteen months after the operation, and there was no trace of recurrence in the stump; the glands had completely disappeared, and the man had gained 20 pounds in weight since the operation.

This successful result is, I believe, largely due to the two following reasons:—1. The diminution of shock as far as possible by the low section of the tissues of the limb, as advocated by Mr. Furneaux Jordan; and 2. The prevention of collapse by the bloodless method of procedure adopted. As regards the operation practised its advantages are so well summed up by Mr. Treves that I quote them with the fullest accord:—

"(*a*) *The elastic tourniquet can be applied.*

"(*b*) The femur is approached through the least vascular part of the limb, and disarticulation may be effected before the main mass of the muscles of the thigh has been cut.

"(*c*) The vessels of the part are divided transversely, and the main artery is severed late in the operation.

"(*d*) Owing to the low position of the incision posteriorly, the branches of the gluteal and sciatic arteries are but little interfered with, and the hæmorrhage from these vessels is comparatively trifling.

"(*e*) The muscles are divided transversely, and the wound surface is therefore small. The main muscular masses are divided low down, so that in a sense the limb is removed at a point further from the trunk than obtains in some of the other amputations, and *shock is hereby diminished.*

"(*f*) An excellent stump is provided—*i.e.*, the ischium (the main point from which the future artificial limb will take its support) is well covered; the cicatrix is brought to the outer side of the limb, and is as far removed from the anus as possible; excellent drainage is provided for.

"(*g*) The position of the vertical incision will permit of the hip being explored before operation, or of excision being carried out should it be revealed that amputation is not necessary." (Vol. I., p. 513).

I have italicised the two points that I think especially recommend this method—the absolute control of bleeding by the use of the elastic tourniquet, and the diminution of shock in the direction indicated—and that these are two of the most important factors in success all surgeons will readily admit. That they are slightly over-estimated I think the result shows, and proves the postulate with which I started—that diminution of either of these or both of these factors would improve the success of the operation. In applying the elastic band in the way I have described, perfect control of all bleeding vessels can be obtained. The methods of obviating hæmorrhage by preliminary ligature, or by skewers (!) or needles, may be regarded as quite unnecessary; and the latter may be finally relegated to the barbarities of surgery. In ampu-

tation of the hip, carried out after the above method, there is no danger of bleeding that any intelligent surgeon cannot control by the simplest surgical means. The cases in which fatal hæmorrhage has occurred are entirely due to faulty methods or injudicious selection of subjects for the operation. Large and rapidly-growing sarcomata of the femur are those cases in which the prognosis is worst, and in which the risk of hæmorrhage to an excessive degree is most likely to be present. But these are exactly the cases in which the delay is most often due to the surgeon not being able to make up his mind to the graver operation, and postponing interference to a stage when operation, if not fatal, is at least critical.

ART. III.—*Asymmetry of the Sternum.*[a] By A. BIRMINGHAM, M.D.; Professor of Anatomy, Catholic University, Dublin.

MY attention has been directed to the asymmetry of the sternum by a bone in my possession which presents this condition in a marked degree. I attributed the want of symmetry in this case to the more frequent use of the right than the left upper limb, for the changes in the bone were such as might be accounted for in this way.

Seeing that most people are right-handed, I thought it probable that a correspondingly large proportion of sterna would show changes referable to this prevailing habit. With the object of testing this view I examined 54 bones. At first sight, I must admit, I was surprised to find that my anticipations did not prove correct. Only about 50 per cent. of the sterna examined presented what I may call right-handed asymmetry, 37 per cent. were asymmetrical in the opposite direction, and the remaining 13 per cent. were approximately symmetrical.

[a] Read before the Section of Anatomy and Physiology of the Royal Academy of Medicine in Ireland, Friday, May 22, 1896. [For the discussion on this paper see page 75.]

Upon consideration it became evident that the sternum should be little, if at all, affected by right-handedness proper, for right-handedness simply means, in the majority of cases, that one hand is used in preference to the other for fine and skilled movements, but not necessarily for powerful efforts where strain is thrown on the limb. These fine movements, which only the right hand is, as a rule, capable of performing freely and perfectly, very often take place at the elbow or in the hand, and as such could produce no appreciable effect on the sternum.

When, however, any considerable strain is thrown on the shoulder, either through pressure directly applied, or through the pull of a weight carried in the hand, the outer end of the clavicle is depressed, the sterno-clavicular ligaments are rendered tense, and the inner end of the clavicle is brought to press forcibly on the facet of the sternum and the first costal cartilage. Such a condition of things occurring frequently on the same side, for a considerable period of time, would naturally produce one-sided effects on the sternum. The effects which might be expected in such cases are:—(1) A depression of the clavicular facet on the side of the excessive strain, accompanied by a diminution of the vertical depth of the manubrium on that side; (2) A diminution of the interval between the first and second rib cartilages on the same side, owing to the pressure of the clavicle upon the first costal cartilage; And possibly (3) an obliquity of the line of the symphysis between the manubrium and gladiolus.

That these conditions are frequently associated will be seen by the following Table, in which the results of an examination of 54 sterna are set out; but, as already mentioned, the relative frequence of their occurrence on the two sides in no way agrees with the proportion of right-handed to left-handed people.

No. of ster-num	Clavicular facet depressed on	Vertical depth of manubrium diminished on	Interval between 1st and 2nd rib cartilages less on	Line of symphysis oblique, and lower on	Longitudinal curve present and convex to
1	Right	Right	Right	Not observed	None present
2	„	„	No difference	„	Not observed
3	Left (slightly)	Left (slightly)	„	„	„
4	Right	Right	Right	„	None present
5	„	„	„	„	Right
6	„	„	„	„	None present
7	Symmetrical	Symmetrical	No difference	„	„
8	Left	Left	„	„	Right
9	Right	Right	„	„	„
10	„	„	Right	„	„
11	„	„	„	„	„
12	Left	Left	No difference	„	Not observed
13	„	„	Left	„	None present
14	Right	Right	Right	„	Right
15	„	„	No difference	„	Not observed
16	„	„	Right	„	Right
17	Left	Left	Left	„	Left
18	„	„	No difference	„	„
19	Symmetrical	Symmetrical	Right (very little)	„	„
20	Left	Left	Left	„	Right
21	Right	Right	Right	Not oblique	Left
22	Left	Left	Left	Right	None present
23	„	„	„	Left	Left
24	Right	Right	Right	Not oblique	None present
25	„	„	„	Right	Left
26	„	„	„	„	Right
27	Left (slightly)	Left (slightly)	Left	„	„

No. of Sternum	Clavicular facet depressed on	Vertical depth of manubrium diminished on	Interval between 1st and 2nd rib cartilages less on	Line of symphysis oblique, and lower on	Longitudinal curve present and convex to
28	Right	Right	Right	Right	None present
29	,,	,,	,,	Not oblique	,,
30	Left (slightly)	Left (slightly)	Left	,,	,,
31	Right	Right	Right	,,	,,
32	Left	Left	Left	Left	Right
33 (age 16)	Symmetrical	Symmetrical	Right	Not oblique	None present
34	,,	,,	Left	Right	Left
35	Right	Right	Right	Not oblique	Right
36	Left	Left	No difference	,,	None present
37	Right	Right	Right	Right	Right
38	Left	Left	Left	Not oblique	None present
39	,,	,,	No difference	Left	,,
40	Right	Right	,,	Right	Left
41	Left (slightly)	Left (slightly)	Left (slightly)	Left	,,
42	Right	Right	No difference	Right	,,
43	Left (slightly)	Left (slightly)	Right	Not observed	Not observed
44	Symmetrical	Symmetrical	Right	,,	,,
45	Right (slightly)	Right (slightly)	No difference	,,	,,
46	Right	Right	Right	,,	,,
47	Left	Left	Left	Left	Right
48	Right	Right	Right	Not oblique	,,
49	Symmetrical	Symmetrical	,,	Left	Left
50	Right (slightly)	Right (slightly)	,,	,,	None present
51	Left	Left	Left	Not oblique	,,
52	Symmetrical	Symmetrical	No difference	Not oblique	None present
53	Right (slightly)	Right (slightly)	Left	Right	Left
54	Left (slightly)	Left (slightly)	No difference	Left	None present

While the number of left-handed to be found among 100 average individuals is very small, the percentage of sterna showing left-handed asymmetry is very considerable—viz., 37 per cent. This, however, is easily explained by the fact that many who are naturally right-handed carry weights habitually and by preference with the left upper limb.

In examining the sterna I was struck by the frequent presence of a longitudinal curve in the whole sternum, with its convexity to one side, most marked, as a rule, towards the lower end of the gladiolus. The presence of this curve, and the direction of its convexity, is noted in the Table.[a]

On analysing the foregoing Table it will be seen that—

(*a.*) Out of 54 sterna a depression of the clavicular facet, accompanied by a diminution of the vertical depth of the manubrium on the same side, was present.

On the right side in 27 (in 3 of which the changes were only slightly marked).

On the left side in 20 (in 6 of which the changes were only slightly marked).

Seven were symmetrical in this regard.

(*b.*) In the same number of sterna (54) the interval between the 1st and 2nd rib cartilages was the same on both sides in 15.

It was less on the right side in 24, on the left side in 15. Of the 24 in which the interval was less on the right side the condition accompanied symmetrical manubria in 3, but in the remaining 21 it was associated with a depressed clavicular facet and a diminution of the vertical height of the manubrium on the same side.

[a] I am much indebted to Professors D. J. Cunningham, Bertram Windle, Arthur Thomson, Charles Stewart, and Dr. F. G. Parsons, for kindly allowing me to examine the specimens of sterna in their collections.

Of the 15 in which the interval was less on the left side, one was associated with a symmetrical manubrium, in the remaining 14 the clavicular facet was depressed and the height of the manubrium diminished on the same side.

(*c.*) Observations were made on the obliquity of the symphysis between the manubrium and gladiolus in 30 sterna only. No obliquity was present in 12; the remaining 18 presented an oblique symphysis.

Of these the symphysis sloped downwards on the right side in 10 (with a depressed clavicular facet, &c., on the same side in 7, on the opposite side in 2, and with a symmetrical manubrium in 1).

The symphysis sloped downwards on the left side in 8 (with a depressed clavicular facet, &c., on the same side in 6, on the opposite in 1, and with a symmetrical manubrium in 1).

(*d.*) Observations on the longitudinal curvature were made in 46 specimens.

The curve was absent in 19, present in 27. The convexity was towards the right in 15 (with depression of the clavicular facet, &c., on the same side in 10, of the opposite in 5).

The convexity was towards the left in 12 (with depression of the clavicular facet, &c., on the same side in 5, on the opposite side in 5, and with a symmetrical manubrium in 2).

CONCLUSIONS.

The majority of sterna—viz., 87 per cent.—are asymmetrical, while about 13 per cent. are approximately symmetrical.

The most notable irregularity is a depression of the clavicular facet, accompanied by a corresponding diminution of the vertical depth of the sternum on the same side,

present on the right side in 50 per cent. of sterna, and on the left side in 37 per cent.

The interval between the articular facets for the 1st and 2nd rib cartilages is usually less on one side than on the other, being narrower on the right side in about 44 per cent., and equal in about 28 per cent. of sterna.

In the majority of sterna the symphysis between the manubrium and gladiolus is oblique, sloping downwards on the right side more frequently than on the left.

Finally there is, in about 59 per cent. of sterna, a longitudinal curve traversing the whole bone, the convexity of which is directed a little more frequently to the right than to the left.

ART. IV.—*A Case of Ruptured Tubal Pregnancy treated by Abdominal Section; Recovery.* By ALFRED J. SMITH, M.B.; Examiner in Midwifery, Royal University of Ireland; Professor of Midwifery, Catholic University, Ireland; Gynæcologist, St. Vincent's Hospital.

ON the 17th of August, 1896, about 4 30 p.m., I was sent for to St. Vincent's Hospital to see a patient in a state of profound collapse.

CASE.—The patient, E. R., aged twenty-eight, was married eight years, and was four times pregnant as follows—viz., the first, a full term child, alive; the second, a full term child, dead-born; the third terminated as an abortion at the third month. This event happened in the month of July, 1894. Since then the patient had not been at all well, and she sought relief in the different special hospitals in this city for a displaced uterus, with only temporary benefit. In May last her uterus was curetted and a pessary put in. Her changes did not return after the curetting, and the patient considered herself pregnant. However, about half an hour before her admission to hospital, she had occasion to get up on a chair to remove a sheet from a drying line in the yard of a house in the immediate vicinity of the hospital, and, to use the patient's own words, "she fell off the chair from weakness," and was unable to rise. She felt no

sudden pain, merely the intense sense of weakness. Dr. Harold, House Surgeon to St. Vincent's, saw the patient, and had her conveyed at once to hospital. When I saw the patient shortly after her admission, I found her greatly collapsed, extremities cold, face anxious-looking and blanched, and the forehead bathed in cold perspiration. She could with difficulty answer questions, and was unconscious of the presence of her husband. Temp. 96° F.; pulse 80, soft and compressible.

Abdominal Palpation.—Very sensitive over lower part of abdomen. A sense of resistance over right iliac region.

Vaginal Examination.—No hæmorrhage. The pessary, a Hodge, was removed. The uterus was retroflexed, movable, and displaced towards the left. The fundus slightly enlarged. Nothing positive was made out in either the right or the left broad ligaments.

Still her alarming condition pointed to ruptured tubal pregnancy. Dr. Tobin kindly saw the case with me, and urged the advisableness of immediate operation. Accordingly, assisted by Dr. Tobin, Dr. Harold giving the anæsthetic, I opened the abdomen. Large clots of blood were found filling the abdominal cavity. There was a momentary difficulty in making out the seat of the rupture, due to the quantity of blood-clots, and to the remarkable softness and indistinctness of the ruptured sac and distended Fallopian tube. The right broad ligament was grasped by the fingers, and a stout silk ligature applied by a Tait's large needle quite close to the uterus. This controlled the hæmorrhage. The fœtus with sac were then removed. The pelvis was cleared of some of the large blood-clots, and hot saline solution poured in. This was not aspirated or sponged away. No drainage.

The specimen consists of a fœtus, distended Fallopian tube with ovary.

The fœtus is 9 cm. long, and is attached by the umbilical cord, which is 13 cm. long, with well-nourished spinal turns, to a tuft of placental tissue, which is seen sprouting from a rent in the superior border of the middle third of the Fallopian

tube. In the ovary is a beautiful example of the corpus luteum.

The chief points of interest seem to me to be—

1. The absence of acute pain at the time of rupture.

2. There was no hæmorrhage per vaginam, or any evidence of decidua being shed.

3. The uterus was in a position of retroflexion.

4. The operation was performed when the patient was in a state of profound collapse.

5. A large quantity of blood was left in the abdominal cavity; its absorption may have contributed to the remarkably rapid recovery of the patient—facts sufficiently unusual to specially justify me in bringing the case forward.

ART. V.—*Oil-rubbing in Dermatological Practice.* By H. S. PURDON, M.D.; Consulting Physician, Belfast Hospital for Diseases of the Skin, &c.

I WISH to direct attention to an ancient plan of treating chronic diseases—viz., by oil-rubbing, introduced into medicine by the celebrated Roman physician, Aurelius Cornelius Celsus, who lived during the reign of Augustus Cæsar. My attention was first directed to this plan of treatment by reading the late Dr. Inman's remarks on its value in his book on the "Restoration of Health," published in 1870.

I have often recommended oil-rubbing for delicate children and youths; the rubbing with the oil, to avoid fatigue, should always be done by another; the shampooing or massage adopted at the same time is likewise beneficial. The invalid's weight in a few weeks will be increased by several pounds; no loss of appetite, as is often the case, or even dyspepsia, as when oil or fats are taken by the mouth. I cannot do better than quote Dr. Inman's own words:—"The value of oil or oleaginous matter when applied to the skin without or with the addition of shampooing, may

be traced in modern times to the period when the medical profession went wild upon the importance of cod-liver oil. No sooner was the belief attained that this oil was good for consumption than it became the practice to give it in every case of phthisis, and none were allowed to die without having first partaken of the nauseous fluid. But it was soon found that many could not digest the dose, even when it was made as palatable as the art of the apothecary could effect. Yet the doctors resolved not to be baffled, and if they could not introduce the material in one way, they would in another, so they had it rubbed into the skin. In some instances the results following the practice were undoubtedly good, but it was attended with very unpleasant accompaniments. The patients who submitted to it became repugnant to the nostrils of their friends, and the odour from the skin often prevented the delicate stomach of the consumptive from receiving food; with the stink of fish-oil always in the nose every article of diet seemed to taste of it, and the rubbing with such a material was soon abandoned."

I have often used cod-liver oil as an outward application, but agree with what Dr. Inman has stated, the odour being so objectionable, also the fish-oil makes more "mess" than a vegetable one, so for years I have prescribed only good olive oil, or, as mentioned further on, cacao butter. To the oil a few drops of perfume can be added, such as oil of bergamot, or bitter almonds, and which is appreciated by the patient. Oil rubbing is, as already mentioned, very ancient. After the bath, in hot countries, the body was formerly anointed with oil, hence I suppose its use in fevers, such as scarlet fever, or where the skin is dry, harsh and hot. As for the oil closing up the orifices of the sudoriparous glands, or "pores," it is as well to say that these ducts, from the formation of the skin, cannot be closed effectually.

The above remarks apply to cases where the skin is entire and not diseased, but in cutaneous complaints when of a chronic nature, and as a local means of treatment in addition to medicines given by the mouth, I have adopted oil rubbing, both over the affected part and in its vicinity, as in the following diseases (the friction of the hand and shampooing being also very useful):—In xeroderma, where on various parts of the body the skin seems tightened, hard, and inelastic, or hangs loosely on the lower limbs, here oil rubbing is highly beneficial—although not curative it should be persevered with for months. The patient if any way strong can manage for himself, and will in a few weeks increase in weight and plumpness. The late Sir Erasmus Wilson, writing about xeroderma, truly remarked that "the history of xeroderma is a narrative of a general degradation of structure of the skin in which all the tissues participate; the corium is hard and thin, and ill-nourished, not unfrequently in the hands and feet breaking into deep fissures," to which he might have added the liability of occasional eruptions of an eczematous character, and often an asthmatic condition. Some physicians recommend rubbing with "neat's-foot" oil, but I do not find it any better than good olive oil.

Another disease in which I used oil-rubbing with advantage, and that in three cases, is pityriasis rubra. Without taking up valuable space I may say that in chronic squamous eczema, when the skin is not much infiltrated, oil-rubbing, adding occasionally some stimulating substance to the olive oil as that of oleum rusci or oil of cade, has proved serviceable, whilst in a few forms of erythema the plain oil has likewise given good results.

In conclusion, every medical man engaged in general practice knows the value of oil-rubbing in scarlet fever, not only to prevent the following dropsy, but also to keep the particles of skin during desquamation from floating

about. Now, in the present day, it is usual to add a little carbolic acid to the oil. Formerly, when engaged in general practice, I used in private cases cacao butter, partly on account of its firm consistence, so easily held in the hand, not too greasy, and also for its pleasant odour, and I would still be inclined to recommend it.

LETTS'S DIARIES FOR 1897.

MESSRS. CASSELL & COMPANY, Ludgate Hill, London, E.C., have courteously submitted to us copies of certain of Letts's Diaries for 1897, which are of use to the Medical Profession. First, we have Letts's Office Diary and Almanac for 1897, which contains a fund of valuable information, including a colonial and foreign banking directory and a parliamentary guide to both Houses of Parliament. It is a substantially bound volume of prepossessing appearance. Next comes Letts's Medical Diary in two forms—one, plain, with space for the entry of 54 patients' names; the other, interleaved, with room for 108 names. Both provide for all matters of interest to the general practitioner, including space for the entry of daily professional visits, accouchements, vaccinations, and so on. Then there are two beautifully neat small diaries—Letts's Convenient Diary, and Letts's Pocket Diary. Both contain calendars, an account of the postal regulations at home and abroad, a wages table, and an almanac for 1898. Lastly, the parcel includes a copy of Letts's medical prescription copyist, which is now so familiar as to need no further description. The prices of all these publications are very reasonable, considering the excellence of the article. We have much pleasure in recommending Letts's Diaries to our readers.

ARMY MEDICAL DEPARTMENT.

WE have been informed by the Director-General that a Competitive Examination for 35 Commissions in the Army Medical Staff will be held on February 5, 1897, and following days. Full particulars will be found in our advertisement pages.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Text-Book of Bacteriology, including the Ætiology and Prevention of Infective Diseases, and a Short Account of Yeast and Moulds, Hæmatozoa and Psorosperms. By Edgar M. Crookshank, M.B., Professor of Comparative Pathology and Bacteriology, and Fellow of King's College, London. Fourth Edition, reconstructed, revised, and greatly enlarged. London: H. K. Lewis. 1896.

Prof. Crookshank is evidently determined not to allow his book on bacteriology, the first edition of which, published 10 years ago, may be described as the pioneer English work on the subject, to fall behind the numerous competitors that have meanwhile entered the field. The text-book, in its present form, is a very beautiful book, a very readable book, and a very *independent* book. We need hardly spend much time in justifying the first two statements, the truth of which will be at once apparent to the most casual reader. In creamy smoothness of paper, flawless legibility of typography, and wealth of brilliantly-coloured illustration, the present edition of "Crookshank" is well-nigh without a rival. The author's style can hardly be described as attractive. His sentences are short, he is always lucid, and—at any rate when dealing with subjects which he has himself investigated—generally interesting. The *independence* of Prof. Crookshank's text-book becomes a marked feature whenever he discusses a question upon which his own results differ from those held by other acknowledged authorities. Take, for example, his demolition of the position occupied by Klein

and the Local Government Board as to the now famous outbreak of cow-scarlatina at Hendon. He analyses the evidence on which Klein's conclusions are based, and finds that it does anything but justify the deductions sought to be drawn from it, whilst at the same time he produces evidence which seems conclusive that the disease in the Hendon cows was merely cow-pox, and "that the milk was not infected by the cows, but with the virus of scarlet fever from some human source which Mr. Power (the Board's Inspector) failed to discover." The importance of this quotation lies in the fact that the theory of scarlatina, based upon Klein's and Power's investigations of the Hendon outbreak, is the one officially adopted by the Public Health authorities of Great Britain.

Another good example of the author's scientific scepticism is to be found at the end of his discussion of the typhoid question. "Sufficient has been said to show that bacteriological reports, in which it is stated that the typhoid fever bacillus has been found in water causing typhoid epidemics, must be accepted with great reserve; and further, that no one is justified in stating that the typhoid fever bacillus is undoubtedly the cause of typhoid fever. It is not found in every case of typhoid, it is not found in the blood, but it is found in those tissues which are commonly the seat of secondary invasion of epiphytic bacteria whose normal *habitat* is the intestinal canal. Lastly," goes on Prof. Crookshank, "as the disease does not exist in the lower animals, the crucial test cannot be applied. The ætiology of typhoid fever is still enveloped in doubt, and the nature of the contagium *has not yet been determined.*"

It would be very desirable that these sceptical views of a deservedly eminent authority should become widely known to the profession; for nothing delays so long our acquisition of truth on any subject as the universal tacit acceptance of an unproved hypothesis—the assumption that finality has

been reached when we are, perhaps, as far from it as in pre-bacteriological days. The author appears, however, to accept "as a working hypothesis" the commonly-held view that the typhoid virus (whatever it may be) is contained in the excreta and, by contaminating water supplies, &c., spreads the disease. Prof. Crookshank might have even strengthened his case in favour of a sceptical view as to the *rôle* of the Eberth-Gaffky bacillus by reference to the acknowledged difficulty of obtaining "typical" typhoid bacilli by plate cultures from typhoid evacuations, and the non-success of two recent workers in London, who strove to isolate the bacillus from the fresh sewage of a London fever hospital, in which, theoretically speaking, it ought to have been present by the million. Again, we fail to find any reference to the important research of Sanarelli on the mutual inter-relation of the *B. typhosus* and *B. coli* in the production of typhoid. Indeed, one may fairly say that Prof. Crookshank's treatment of the whole typhoid question is sketchy and incomplete—one of the weakest points in the book. The weakness extends to his account of the practical methods employed for the detection of bacilli of the typhoid group in drinking-water.

On page 148 we are told, under the head of Parietti's method, that "if the broth becomes turbid in a day or two the typhoid fever bacillus is present in the form of a pure-culture"—a quite inaccurate statement, seeing that the bacilli almost invariably isolated from turbid Parietti-tubes much more closely resemble *Bacillus coli!* We have failed to find any reference to the very excellent method of dealing with suspected drinking-water by running a large quantity through a Pasteur or Bukefeld bougie, and plating out the "sludge" in carbolised gelatine. Reference to perhaps the most important piece of evidence in favour of the ætiological relation of Eberth's bacillus is also omitted—the fact that the serum of typhoid patients exercises a marked destructive influence on the bacillus, causing almost instant immobilisation

and then "agglutination" of the more or less devitalised bacilli. This method, which is known as Widal's, has been shown by Prof. Delépine, of Manchester, to be available for the diagnosis of typhoid, and we have ourselves lately been able to confirm the truth of the above-mentioned observations. It is, indeed, difficult to account for them on any other hypothesis, save that of the specific relation of Eberth's bacillus to typhoid fever.

One of the strongest points of Prof. Crookshank's text-book is the adequate treatment accorded to the various exanthemata in men and animals, for which no bacterial ætiology has as yet been worked out. Thus we have most valuable chapters on cow-pox, small-pox, cattle-plague, sheep and horse-pox, in which the history and symptoms of these eruptive maladies are discussed in most thorough-going style, and a vast array of interesting and valuable facts adduced which are not to be found in the ordinary text-books of bacteriology. The author is to be most heartily congratulated on avoiding the pernicious error of dismissing, in a few lines, some of the most important of human and animal diseases, because we have not yet succeeded in connecting them with specific micro-organisms.

The exigencies of space prevent us from following the author through his lengthy account and exquisitely illustrated description of tubercle and actinomycosis. In connection with the former it may be remarked, *en passant*, that a useful *résumé* is given of the report of the Tuberculosis Commission on the infective potentiality of tuberculous meat and milk. Three or four sentences may, perhaps, be quoted here. "Tuberculous matter in milk is exceptionally active in its operation upon animals fed either with the milk or with the dairy produce derived from it. *No doubt the largest part of the tuberculosis which man obtains through his food is by means of milk containing tuberculous matter.*" And finally, "Ordinary processes of cooking applied to meat which has got con-

taminated on its surface are probably sufficient to destroy the harmful quality. *They would not avail to render wholesome any piece of meat that contained tuberculous matter in its deeper parts.*"

We fail to find any reference to Coppen Jones' and Fischel's researches into the morphology of the tubercle "bacillus," and its relation to *Streptothrix* is not even hinted at, nor, though the author states that "short-branched threads" are formed, does he seem to attach to that fact the importance it deserves from its bearing on the systematic position of the organism in question.

Turning to the very detailed and lavishly illustrated chapter on Actinomycosis, whilst according the highest praise to the way in which the subject is handled, we cannot refrain from expressing our opinion that the author will find very few pathologists and still fewer botanists to follow him where he says that the characters of the ray-fungus "bring it into relation with a higher group of micro-fungi (!), Basidiomycetes." Suggested similarities to teleuto-spores, paraphyses and "fairy rings" are, having regard to the present advanced state of mycology, greatly to be deprecated.

An interesting and valuable extract from the final Report of the Vaccination Commission, published only in September last, is appended, and contains that portion of the document which deals, *inter alia*, with the author's well-known heterodox views as to the relation between vaccinia, cow-pox, and small-pox. It is highly instructive, and we can heartily commend the impartiality and sound judgment displayed by the author in placing before his readers this important Report, differing as it does so strongly from his own expressed opinions.

The bibliographical appendix is very incomplete, and in many cases not brought up to date.

To sum up, with regard to Prof. Crookshank's text-book, we must say no more than what we have already stated at the beginning of this notice—it is *beautiful, readable, indepen-*

dent, and, in the main, *reliable*. In its new, enlarged, and remodelled form it is undoubtedly one of the most acceptable of recent additions to British bacteriological literature.

Electro-Physiology. By W. Biedermann. Translated by Frances A. Welby. Vol. I. London: Macmillan & Co. 1896. Pp. 552.

The appearance of this work in 1895 marked an epoch in the literature of general muscle and nerve physiology. Since 1879, when the remarkable articles on the general physiology of muscle and nerve by Professor Hermann were published by him in his "Handbuch der Physiologie," no attempt has been made to collect and systematise the innumerable works which have appeared on the subject. These are scattered, and many of them difficult of access, and their bulk has become so enormous that, as Professor Biedermann says in his preface, any student who is not a specialist finds it impossible to gain a critical acquaintance with the whole subject. He modestly puts forward his own pretensions to undertake a synopsis of the present condition of this branch of physiology, pretensions which will be fully admitted by everyone who knows the numerous and valuable contributions to science which we owe to his industry and genius.

The present volume is divided into five chapters. In the first, on the organisation and structure of muscle, a most admirable account of the histology of the contractile organs is given, starting from the muscles of protozoa (cell-muscles), and tracing the gradual evolution of the tissue until we reach the striated muscles of vertebrates and arthropods. We do not know any work in which this interesting but difficult subject is more clearly and pleasingly discussed.

The second chapter deals with the change of form in the

muscles during activity, and is divided into several sections treating of the influence on the power of contraction, of the nature of the muscle, strength of excitation, load, fatigue, temperature, and chemical agencies. In this chapter too, are considered the summation of stimuli and tetanus, and the conductivity of muscle.

The third chapter is on the electrical excitation of muscle, and the fourth on the electro-motive action in muscle. In this chapter there are four sections, describing in order the current of rest, the current of action, the positive variation of the muscle current, and the secondary electro-motive manifestations in muscle.

The fifth and last chapter, a most attractive one, is on the electro-motive action of epithelial and gland cells.

At the end of each chapter an extensive bibliography of the subject of it is given. The volume is illustrated by 136 figures in the text, and a good index has been added.

It would be impossible in our space to give any summary of the contents of such a volume as this. We may, however, say that the views of Hering on assimilation and dissimilation of all living tissues (views practically identical with those of anabolism and katabolism made popular in this country by the classical works of Gaskell), lie at the foundation of the theories of muscular action put forward by Biedermann. The author further shows that when an electrical stimulus is applied to a muscle or other irritable protoplasmic structure the effects are not limited to the moment of closure and opening of the current, but are manifested during the entire period of closure, and for some time afterwards. That these effects are polar. That in all, with very few exceptions, an excitatory effect is manifested at the kathode at and during the closure, while the anode is the seat of an excitatory action at and after the opening; an inhibitory effect exists at the

anode at and during closure, and at the kathode at and after opening. "The persistence of the excitatory or inhibitory effect of current during closure, as well as the localisation and antagonism at the poles, prove incontestably that *the consequences of electrical excitation are only a special manifestation of commencing electrolysis in the living substance.*"

As regards the existence of the so-called resting current, Professor Biederman sides with Hermann, and places the seat of the electro-motive action at the line of demarcation between living and dying substance. According to Hering in every living substance ascending and descending alterations are taking place. So long as these are in equilibrium no current can be detected by the most sensitive galvanometer. But when a part is injured, the down changes near it are increased, equilibrium with the other parts no longer exists, and the injured part is negative to the uninjured.

The difficulties of translating such a work as this must be very great, and on the whole Miss Welby may be congratulated on her work. The translation, however, is not an absolutely ideal one. The singular lucidity of the original has not been reproduced. Not only do we meet with awkward expressions—such as a muscle *serving up* contractions, the continual use of the Latin *re*, as "The facts submitted above *re* discharge," &c., &c.—but in many cases the rendering is so obscure that it is difficult to catch the meaning without reference to the original, while in some instances the meaning of the author is not reproduced at all. We have, in going through the text, noted several passages bearing out these remarks; of these we may give a few. On page 115 we read, "We can readily see that the height of the summated twitches must be greatest—*i.e.*, doubled—when the interval of both stimuli, like the stage of rising energy, is a simple contraction." The original s. 98 reads—"Man sieht leicht, dass die Höhe der summirten Zuckung dann am grössten, d.h.

verdoppelt sein müsste, wenn das Intervall beider Reize gleich dem Stadium der steigenden Energie einer einfachen Zuckung ist." Which means that the height of the contraction is doubled if the interval between the two stimuli is equal to the period of the rising energy (that is, shortening) of a simple twitch. On the same page, a few lines further on, "equivalent" does not give the sense of *gleichlanges*, while at the bottom of the same page "the apex of the summated twitch falls so much farther from the first stimulus in proportion as it lies higher," is the very opposite of what the author states. On page 358, after describing how dipping one end of a Sartorius into distilled water does not produce electric inequality between the part which has been immersed and that which has not, we read—"But if part of the moistened muscle section is warmed in water at 40° C., it exhibits on leading off the same electro-motive action as before." While on s. 305 we read, after dipping in water at 40° C., "so findet mann den Muskel bei gleicher Ableitung wie vorher stets elektromotorisch wirksam." Which means that the muscle is now found when led off in the same way as before (that is, from the immersed and non-immersed parts), electromotorially active; the very opposite of what is stated by the translator. On page 484, in speaking of the variation produced in the resting current of the mucous membrane of the tongue of the frog by electrical stimulus, it is said that the duration of the latent period "decreases inversely with increasing strength of current," while the original s. 412 runs—"dass es mit wachsender Stromstärke abnimmt," or that it diminishes directly with increasing strength of current—not inversely, as translated. Finally, on page 493, in describing Hermann's method of leading off the skin current from the legs of a frog, "behäuteten Beine" is translated "skinned legs"—which means legs with the skin removed, while the original means legs with the skin still on.

We have marked many other defective renderings, but these will suffice to show that our criticism is not unjustified. This criticism we make in no captious spirit; we fully recognise the valuable service Miss Welby has rendered to physiological science by making this great work accessible to many readers to whom it would otherwise remain a closed book. We look forward with pleasure to the publication of the second part on the nerves and electric fishes, and we have no doubt that in the second volume the oversights in the translation which we have noticed will be much less apparent.

The Laboratory Text-book of Public Health. By WILLIAM R. SMITH, M.D.. D.Sc., F.R.S. Edin.; D.P.H. Camb.; Professor of Forensic Medicine and Director of the Laboratories of State Medicine, King's College. London: Henry Renshaw. 1896. 8vo. Pp. 322.

THIS work impresses one considerably "on the view." A gorgeous cover, thick white paper, large clear-cut type, and numerous well-executed engravings, contribute to make its study easy and attractive. We may be wrong, but we have an idea that one cannot learn much out of a book in which the type is too small and crowded, the paper thin and of bad colour, and the illustrations badly executed. Prof. Smith's work has, however, more than good paper, type, and engravings to commend itself to our notice; it contains a large amount of information of prime importance to the student of sanitary science. The subjects are exactly those which the candidates for diplomas in Public Health *must* know if they desire to render success certain. The first part of the work treats of the physical properties of matter, in its three great forms of solid, liquid, and gas, and the instruments used in the examination of these forms of matter. The barometer, thermometer, specific gravity bottle, hydrometer,

&c., are described very accurately and fully. Part II. deals with the analysis of potable waters. Although the author gives the details of the Frankland process of water analysis, in which both the organic carbon and nitrogen are determined, he points out that it is only in the hands of a special water analyst that this method yields reliable results. Wanklyn's simpler method—a knowledge of which is easily acquired—is that which is now all but universally employed. Part IV. is devoted to very full accounts of the method of examining air, from a sanitary standpoint. Nothing is said as to determination of the composition of atmospheric air by the methods of Dumas, Boussingault, &c., for the student in sanitary science is never questioned on the subject of the complete analysis of air. The author, therefore, deals only with carbon dioxide, and with the impurities of the air, referring specially to the air of towns.

In Part IV. the newest methods for the analysis of foods in reference to the detection of adulteration, and of defects in quality, are given. The table showing the correspondence between the amounts of alcohol in spirits and its specific gravity and strength would be improved by the addition of one showing the percentage of added water in spirits below 25 degrees under proof—the lowest degree allowed by law to be sold without declaration of strength.

Part V. is confined to microscopic examination of parasites (most of which have special interest to the student of sanitary science), starches, and water sediments.

Part VI. is a long one, and treats of bacteriology. The information given is up to date. In the appendices, which are 7 in number, the preparation of standard solutions, the interpretation of analytical data, the preparation of nutrient materials for cultivations, atomic weights, the metrical system of weights and measures, are treated upon. Some of the matter might have been better given in other places—for example, in the chapters on bacteriology the preparation of nutrient materials might have been placed.

There are no fewer than 82 illustrations in this book—a work which we strongly recommend to the sanitarian, pathologist, and medical student.

The Imperial Health Manual: being the Authorised English Edition of the Official Health Manual issued by the Imperial Health Department of Germany. Edited by ANTONY ROCHE, M.R.C.P.I., &c.; Professor of Medical Jurisprudence and Hygiene, Catholic University, &c. Dublin: Fannin and Co. 1896.

THE existence of a work such as that reproduced from the German by Dr. Roche is another proof of the great interest taken by the German Government in all that concerns the health, education, and technical instruction of the German nation. Would that our Government took a similar enlightened view of its duties! Both the Imperial Government of the Empire and the governing bodies of the individual States composing it spend vast sums of money in the maintenance of science laboratories, agricultural stations, technical schools, and other institutions designed to promote the health and material prosperity of the people. In our countries only a trifling proportion of the revenue is expended on such purposes.

The Imperial Manual of Health deals with so many subjects that none of them can be exhaustively dealt with in a book of moderate size and offered for 2s. 6d. But so far as it goes, the most important part of the various subjects are presented to the reader in terse but clear language. The rather lengthy and involved sentences which characterise German are rendered into simple and concise English. The earlier portions of the book are altogether physiological, and are illustrated by several woodcuts showing the structure of the brain, the eye, the ear, and other organs. A well-executed coloured illustration exhibits the vascular structure

of the whole body. Air and water are described briefly but clearly, and food is discussed at some length, 62 pages being devoted to the subject.

There are few, if any, subjects relating directly, or even indirectly, to public health and private hygiene which are not touched upon in this valuable little book: here are a few topics not generally treated upon in works of the kind—spices, care of the mouth and teeth, electric light, scavenging, pleasure resorts, funeral obsequies, removal of waste water from factories, improper division of school work, lightning stroke, insurance against sickness, taking of medicines, &c.

The only fault we have to find with the work is the absence of an index and the very brief reference to the water-carriage system of excreta removal. The latter defect shows how little progress has been made in Germany in reference to the use of water-closets. As the book is sure to reach a second edition, we venture to suggest to its English editor that the addition of some foot-notes to it, supplying information in reference to British sanitation, would be valuable. Much as we are indebted to foreign sanitarians, it must be admitted that the words of a great French writer—"England is the home of sanitary science"—still hold good.

Animal Tuberculoses and their Relation to Human Tuberculosis. By Ed. Nocard, Professor of the Alfort Veterinary College. Translated by A. Scurfield, M.D. Ed., D.P.H. Camb. London: Baillière, Tindall, & Cox. 1895.

Dr. Scurfield, the distinguished Medical Officer of Health for Sunderland, has rendered to us a useful service by translating Dr. Nocard's work. For centuries the popular belief was that tuberculosis was a hereditary disease—that children were born with the seeds of the fell disease in them, and that in due time the seeds would almost certainly develop into the fatal "consumption." Dr. Nocard has shown con-

vincingly the incorrectness of this old-fashioned belief. He has brought forward many striking proofs of the highly contagious nature of tuberculosis, and has shown how widespread this disease is amongst the domesticated animals. In Paris recent statistics show that it affects 23 per cent. of the poultry. Statistics collected from various sources are quoted to show how extensively tuberculosis prevails amongst milch cows and bullocks. That phthisis may be communicated to man by the ingestion of the flesh and milk of animals affected with that disease seems incontrovertible. Dr. Nocard shows that the converse of this is possible—a tuberculous man may be dangerous to a healthy cow. The means of preventing the spread of tubercular infection amongst cattle is discussed at some length, and a favourable opinion is expressed as to the value of tubercular injection as a means of determining the existence of the disease, even when the animal appears to be perfectly healthy. All who are interested in tuberculosis should provide themselves with Dr. Nocard's work.

The Surgery of the Chest. By Stephen Paget, M.A., Oxon., F.R.C.S.; Surgeon to the West London Hospital and to the Metropolitan Hospital. Bristol: John Wright and Co. 1896. Demy 8vo. Twelve Plates. Pp. 500.

In this book Mr. Paget has endeavoured to bring together "the whole subject of the surgery of the chest both in injury and in disease." About no region of the body has greater interest centred of late years, and nowhere has operative surgery been more active. As a natural result there has accumulated an enormous mass of literature, and to critically review this, guided by his own extensive personal experience, has been the task of the author.

The book has been divided into two parts: the first deals with Injuries, the second with Diseases of the Chest. In

the first chapter some anatomical landmarks are given, and, we think, these might have been described with a little more precision, particularly as they concern the lower limit of the lung and pleura. In his account of rib fractures, the author, we are glad to see, points out the fallacy of the usual division of these injuries, and quotes Bennett's analysis of "seventy specimens of fractured ribs, plainly due to indirect violence," in which not one was found showing outward displacement. The chapters which deal with the complications of chest injuries are full of interest, and particularly those which concern hæmorrhage from the lung and wounds of the heart. At the present day there would appear to be considerable divergence of opinion as to the indications for operating in the former class of cases. An interesting case of M. Michaux is quoted in which recovery followed exposure of the bleeding point near the root of the lung and plugging the wound with iodoform gauze. The opinions of French surgeons on this subject are briefly given as they were expressed at the Société de Chirurgerie (1895). The account of the Surgery of the Heart, both in this and the second part of the book, affords delightful reading. Cappelen's case of heart-rupture is given in the chapter on Pericardial effusions.

In Part II. the chapters devoted to Empyema are of primary importance, and the subject is dealt with in a thoroughly able and satisfactory manner. The author has been careful not to encroach on the purely medical aspect of the subject, and this wise precaution is noticeable throughout the entire work, and is not the least potent factor in contributing to the excellence of the book. Schede's work has received the prominence due to it. A tabular statement of his cases of knife and bullet wounds is given, as well as a table of his operations for empyema up to 1890, and the original account is given of his operation known as Thorax-resection. This operation differs from Estlander's in that Schede removes the thickened pleura as well as the ribs

which overhang the empyema cavity. Mr. Paget says:—"It is certainly not an operation that most surgeons would welcome if they could honestly avoid it, nor would the results of it, if it were generally practised, be such as Schede himself has obtained;" but he goes on to point out that "the danger is less than at first sight appears . . . . One is not really operating on an empyema but removing a great cage or frame of ribs and thickened pleura, beneath which there are no structures that one need either respect or fear." The operation is, of course, performed only in very exceptionally bad cases, "as a last desperate necessity, a confession of failure."

In Chapter XIX. a sufficiently complete account of abscess of the lung and bronchiectasis is given. We venture to think that the author trusts somewhat too much in records of cases; we ourselves have always regarded these as rather indigestible mental pabulum, but this may be a personal peculiarity and misfortune. In reading the chapters on the surgery of tubercular pulmonary disease, we cannot but recall to mind the words of Erichsen in reference to similar operations—are they "surgical triumphs or operative audacities?" The legitimate surgery of Phthisis would appear to be confined to very narrow limits—to drainage, as simply effected as possible, in cases of fœtid pyo-pneumothorax and in certain cases of large tubercular cavity.

Dr. Cayley's operation for profuse hæmoptysis is condemned, we think, with scarcely sufficient force. The object of this operation is to arrest hæmorrhage by inducing pneumothorax and collapse of the lung by an incision through the pleura!

M. Tuffier's operation in 1891, and that of Mr. Lowson in 1893, of resection of the lung apex are given, and most surgeons will agree with the author's views with regard to this operation: "The indications for the operation are so doubtful, the advantage of it so uncertain, and the proportion

of deaths from it so large, that at present there is no clear reason why the surgeon should undertake it."

We have referred only to a small portion of the matter contained in this most valuable and well-written book, and we congratulate the author on having so ably filled a gap, which has till now existed, in the modern surgical literature of this country.

Memorials of the Faculty of Physicians and Surgeons of Glasgow (1599–1850). *With a Sketch of the Rise and Progress of the Glasgow Medical School and of the Medical Profession in the West of Scotland.* By ALEXANDER DUNCAN, B.A. Lond.; Secretary and Librarian of the Faculty. Glasgow: MacLehose & Sons. 1896.

THE professional patriotism of the Diplomates of the Faculty of Physicians of Glasgow has been well displayed in the preparation of this memorial volume. It is a really splendid specimen of latter-day bookmaking; the typography and style of illustration are excellent, and the book now laid before us reflects the highest credit upon the skill and good taste of both printer and publisher, as well as upon the energy and literary attainments of the author. There is a great deal of interesting and instructive narrative included within the covers of this volume. From the outset "the members of the Faculty were thus not lacking in what they considered their duty to God, neither were they neglectful of what was due to themselves. Laws to regulate points of medical ethics were frequently made and renewed. In the very first meeting held in 1602 the subject crops up, and a few days later 'it is statute and ordanit that non of ye brethren tak ane patient out of ane others hand until the time y^{t} the sd brother be fully satisfiet for his paines and y^{t} at the visitours sight and gtermasters, under the paine of paying to the box 40 lbs. unforgiven.'"

For both professional and general readers the annals of an institution which gave the benefit of its medical education to the author of "Roderick Random" and the author of "Zeluco" must possess a more than transitory interest. Readers of the novels of Smollett are often unaware that he wrote an "Essay on the Medicinal Uses of Tar Water." In his case *physic* may be said to have been the accident, and literature the *design* of his career; the reverse of this statement would be pretty nearly true of Dr. John Moore.

"In 1852 the Society appears to have been a good deal exercised about a case of alleged plagiarism from Claude Bernard, by one of the members, in a paper on 'The Origin of Sugar in the Animal Economy.' After some discussion, a motion of Dr. Andrew Buchanan and Mr. John Reid was adopted, that it was no part of the function of Society to exercise moral censorship over its members, and they therefore resolved that it was inexpedient to proceed further in the matter." And so did Caledonian good sense throw unprofitable moral questions overboard. "When a Scotchman compiles Scotch annals, the result must needs be a canny brew. . . . After all there are none like them, these hardy, heartsome Scotch." So says a recent Yankee reviewer; so say we.

Deaf-Mutism: A Clinical and Pathological Study. By James Kerr Love, M.D.; Aural Surgeon to the Glasgow Royal Infirmary; Honorary Aurist to the Glasgow Deaf and Dumb Institution. With Chapters on the Education and Training of Deaf-Mutes. By W. H. Addison, A.C.P.; Principal of the Glasgow Deaf and Dumb Institution. Glasgow: James MacLehose & Sons. 1896.

In this handsome and well-printed octavo of 369 pages the author gives an excellent account of the phenomena of deaf-mutism, and the present state of our knowledge of

this important subject. "It was the want of English medical literature on the subject which prompted the authors to undertake this work." It "attempts to deal with deaf-mutism in a broader and more comprehensive way than it has been dealt with hitherto in this country. It originated in a desire to found a scientific classification of the deaf for educational purposes." The authors have dealt thoroughly and well with their self-allotted task, and we consider that they deserve our best thanks and congratulations.

The earlier portion of the volume (Chapters I.–VIII.) deals with the Clinical and Pathological aspects of the conditions in question, while the succeeding part (Chapters IX.–XIV.) deals with the Educational problem. There is no divergence in the teaching of the two parts; "but it must be understood that each author is responsible for the facts and opinions of his own section only." The former section is the work of Dr. J. Kerr Love; the latter of Mr. W. H. Addison. Dr. Love is also responsible for the colonial and foreign figures.

It is but of recent years that the very important subject of the volume before us has emerged from the neglect with which it had ever before been treated. In this, as well as in other departments, our nineteenth century—let pessimists sneer as they will—can well afford to boast of the advancements made in the interests of philanthropy. It was the work of the distinguished Dublin aurist, Sir William R. Wilde, which first placed the clinical study of deaf-mutism on a scientific basis. The author, who was also one of the Census Commissioners of Ireland, had special facilities for obtaining statistics and other data for such a work. Accordingly, his book "supplied us with our first accurate figures regarding the extent of deaf-mutism in these islands, and it contains the statistical notices of the causes of acquired deafness." The authors have had, how-

ever, ample ground still left them for original investigation and practical suggestion, and we feel bound to say that not an inch of it seems to have been left untouched. The amount of information collected is really enormous, and speaks in terms which cannot be contradicted of the enthusiastic energy and the conscientious care which the authors have brought to bear upon their work. It would be idle for us to attempt to examine the details of a work like this. Not only every specialist, but every general medical practitioner, and every philanthropist should make himself acquainted with the contents of this most instructive and praiseworthy book.

A Treatise on Cholelithiasis. By B. Naunyn, M.D.; Professor of Clinical Medicine in the University of Strassburg. Translated by Archibald E. Garrod, M.A., M.D., F.R.C.P. London: The New Sydenham Society. 1896. 8vo. Pp. 197.

The name of Professor Naunyn has been long and honourably connected with the subject of diseases of the liver and gall-bladder. In the monograph which Dr. Garrod has now translated for the New Sydenham Society the Professor gives an exhaustive account of gall-stones and biliary colic. His treatise was published at Strassburg in the beginning of the year 1892, just five years ago. It was written as a tribute of respect to his predecessor in his chair, Dr. Adolf Kussmaul, to whom it was dedicated by the author, "in the name of the Medical Faculty of the Kaiser Wilhelm's University in Strassburg."

The topics discussed are the form, structure, and composition of gall-stones, the physiology of the calculus-forming substances, on the solution of these in the bile, the formation of gall-stones, the production of the calculus-forming substances within and without the gall-bladder, the causes of

cholelithiasis, its symptoms and treatment. At the end are a full bibliography and an index.

The work of translation has, in the main, been well done. At page 181 this uncouth sentence occurs: "The moment at which general infection threatens is often not easy to hit upon in individual cases." The meaning is quite clear, but it would run more smoothly thus: "In individual cases it is often not easy to hit upon the moment at which general infection threatens." At page 135 "Oberförster" should be rendered into English by "ranger." At page 123 "China wine" is strange. Surely it should be "Cinchona wine," "China bark" being "Cinchona bark." "Cholangitis" (*passim*) should preferably be "cholangeiitis." "Radicles" (page 130) is a mis-spelling for "radicals"—*i.e.*, the radical (or root) branches of the portal vein. "Grainger Steward" occurs on page 133. In fact, the proofs seem to have been rather carelessly revised, for on one page alone (156) we find "typanites," and "senosis." There is no such word as "hilus" (page 165), it should be "hilum." These may appear minor faults in the eyes of some readers, but the New Sydenham Society has a great reputation to uphold and *noblesse oblige.*

A Manual of Midwifery. By W. E. FOTHERGILL, M.B., &c. Edinburgh: William Clay. Crown 8vo. Pp. 475.

THE Manual before us has avowedly been written, in the first instance, for Edinburgh men, and is an effort to crystallise and embody the teaching that obtains on this subject in that city.

It thus becomes possessed of an interest apart altogether from its merits as an obstetrical work, and can be read with much profit by those even most opposed to the conclusions arrived at as to the proper methods of dealing with obstetrical complications.

The author but rarely wanders beyond the limits of his own city to seek for authority in support of his views. The work, in consequence, is somewhat stunted, and can hardly be recommended as an absolute guide to midwifery, or even as an examination treatise for those studying outside the range of Edinburgh influence.

Before proceeding further in our comments on the book itself, we wish to remark how excellently it has been turned out by the enterprising firm of publishers. As a mere exhibition of cheap and, at the same time, high art it would be difficult to beat. We include in these observations the binding, the letterpress, and the many illustrations.

The work in many respects departs from those formerly published, in that much consideration is given to physiological and theoretical subjects, whilst practical portions of the work are unduly curtailed. Thus, eight pages suffice for the description and treatment of puerperal sepsis, whilst menstruation occupies eleven pages of the author's space.

We are pleased to see that anatomical details are omitted as much as possible, and are of opinion that this example could be followed with advantage in similar works. The subject can much better be studied by other methods, and when introduced at any length into midwifery manuals merely adds to the expense without affording any compensating advantages.

On the other hand, the section on Embryology is sufficiently complete for the requirements of the obstetrical student. It is written in a clear, readable style, and the formation of the amnion is illustrated by coloured diagrams which are understood with considerable ease. The subject of contracted pelvis receives but scant notice, nor is the author's treatment for these complications either sufficiently precise or above criticism. This portion of the work is rendered valuable, however, by a description of Walcher's position in difficult delivery. It is but little understood as

yet, and the author does well to call attention to its merits.

Dr. Milne Murray's views are, for the most part, reproduced in the section dealing with forceps delivery. Too much importance is bestowed on the proper construction of the instrument and too little on the indications for its use. We cannot approve its application in those cases of contracted pelvis where the head does not fix in the brim without its aid.

It is in those very cases that much injury can be done to the soft parts by indiscriminate and nearly always premature efforts to deliver. We hold that it is the operator and not the forceps that should in chief part be taken account of.

It would be absurd did we endeavour in detail to notice the subjects treated of; sufficient to say that the work omits few that are of interest or, at all events, of common occurrence. In this respect it is unusually complete for its size.

The author can adduce eminent authority for almost everything that he has said, and though on many subjects we find ourselves in sharp contrast to him, yet still it cannot be denied that the work is a real contribution to the science of obstetrics, and as such we cordially welcome it.

Sterility. By ROBERT BELL, M.D., F.F.P.S.G. London: J. & A. Churchill. 1896. 8vo. Pp. 87.

WE really see nothing in this book to commend it to those anxious to become better acquainted with the ætiology and treatment of sterility. We have conscientiously read it through, and quite fail to note any one passage that would be likely to instruct those acquainted with the most elementary gynæcological works published in recent years.

Had the author confined himself to precise statements and ascertained facts—no matter how stale—we would not be concerned in adversely commenting on the work His hopeless lack of precision, together with his utter disdain for proofs in support of his theories, is calculated to irritate those who read the book.

Dr. Bell, at the outstart, sets himself the task of demonstrating the falsity of the theory which he states "has frequently been assumed," namely, that the right ovary gives origin to male ova and is sterile as regards female. He has proved this to be false, and we can only hope that an ungrateful country will mark in a fitting manner its estimation of these important observations.

Anatomy, too, has occupied the author's attention, and he finds that the tubular formation of the uterus and the rigidity of its walls possess considerable powers of retaining that organ in its "erect position." "Displacements of the uterus are invariably dependent upon a flaccid condition of its walls," and again we read that if the uterine walls become pliable and lose their normal tone, flexion backwards will inevitably ensue.

It is a cause of much astonishment that views so little in accordance with ascertained facts should still find champions to persistently put them forward. Needless to say that there is abundant proof forthcoming to show that the normal uterus is a small flaccid organ, lying in a position of acute anteflexion, when resting on the emptied bladder; that the intestines lie on its posterior wall; that it rises and falls with the filling and emptying of the bladder, and that backward displacements can alone occur from impairment of the utero-sacral ligaments; finally, that a rigid uterus is an abnormal one.

The author is right in attributing sterility to endometritis, in a certain proportion of cases, but errs in assuming that in the majority of instances sterility is removed by the use of the curette.

Bald assertions, of which the following is an example, constantly occur throughout the book. I have "lost count of the number of cases of endometritis that have come under my observation and treatment, and I flatter myself that the results obtained will compare very favourably with those of Apostoli."

Finally, we have to note the curette designed and employed by Dr. Bell, as it appears to fulfil fewer of the conditions requisite for a safe and aseptic instrument than any other we have come across.

Our Baby. By MRS. LANGTON HEWER. Fourth Edition. Bristol: John Wright & Co. 1896. Pp. 134.

WE can say, without any exaggeration, that this book should find a place in every household of young children. Those of us who have much to say to the healthful bringing up of children, cannot but be struck at the lamentable want of system and intelligence that obtains amongst mothers and nurses in this respect. How often do we see the cry of a dyspeptic infant interpreted as an indication for more food? How hopeless apparently it is to contend against the ignorance and prejudice of mothers and nurses (?), elderly ones being particularly intractable in this respect?

Women who meet one's every argument by the announcement that other children have been reared by them on such and such a system, totally ignoring the fact that it is to a powerful constitution and not to their system that these results must be attributed.

It is as a household instructor that the book before us commends itself, and the information it affords is full and for the most part accurate. Directions as to the bathing, clothing, and feeding of the infant are given. Also indications as to any departure from health. Short descriptions written in plain language are afforded as to the common

ailments of children. How to combat diarrhœa and constipation receive due notice. The merits of different foods are written of. The author, however, greatly damages her book by dabbling in medicines, of which she appears to know but little, and we cannot too strongly condemn the advice that tincture of aconite in drop doses may be given to a child of one year old.

The little work will be most valuable to those who read it with intelligence. For those, however, who undertake the treatment of diseases of which they possibly are as ignorant as the author herself, relying on the information contained in this manual, they were better off had they never seen it.

Summary of a Report by Dr. S. P. Impey, M.D., M.C., on his Tour through Europe and Egypt for the purpose of enquiring into certain Matters connected with Leprosy. Printed by Order of Mr. Speaker. Cape Town, 1896. Pp. 41.

Dr. Impey—whose official position is not revealed in these pages—obtained leave of absence in the latter part of 1895, visited many leper hospitals, and consulted many experts, with the view of completing his study of leprosy. The points on which he sought for fuller information were: the contagiousness of leprosy, the spontaneous cure of anæsthetic leprosy, the danger of its spread, and "the possibility of curing tubercular leprosy, in its earlier stages, by means of acute inflammatory affections." After consulting nearly forty specialists, in Scandinavia, Berlin, London, Lisbon, Seville, Rome, and Egypt—some of whom had had wide Eastern experience of leprosy—Dr. Impey arrived at the following conclusions:—"1. That leprosy is a contagious disease, and that it is spread by contagion only. 2. That anæsthetic leprosy is often spontaneously cured.

3. That the danger attached to the discharge from hospital of anæsthetic lepers, which danger is more theoretical than practical, is so infinitesimally small as to be unworthy of consideration. 4. That inflammatory affections have a beneficial effect on tubercular leprosy, and that there is a fair prospect of the treatment of this form of leprosy in its earlier stages by means of erysipelas being successful." On these conclusions he bases his recommendations that anæsthetic cases, in the Cape Colony, should be released from segregation, to which the Leprosy Repression Act condemns them.

The Profession of Medicine: its Study and Practice; its Duties and Rewards. By CHARLES WEST, M.D.; Fellow and late Senior Censor of the Royal College of Physicians; Founder of the Hospital for Sick Children; Foreign Associate of the National Academy of Medicine of Paris, &c. London: Kegan Paul, Trench, Trübner & Co., Ltd. 1896. Pp. 115.

WHEN a veteran

> "Shoulders his crutch and shows how fields were won,"

the interest of the most apathetic is stirred. An honoured veteran is Dr. Charles West—who handles a pen instead of a crutch; and there are few of our profession, students or practitioners, who will not be benefited as well as interested by perusal of this little volume—the result of sixty-three years' experience of a successful physician's practice.

Reviewers are slanderously reported not always to read the works they review; this booklet we have read through, and recommend to all. To certain parts of it we desire to call particular attention. On page 31 will be found some kindly hints of the weaknesses of the modern nurse, which one will do well to note. On "The Duty of Professional Secrecy" (p. 36), Dr. West's remarks, which include informa-

tion upon the law on this subject in other countries, are most valuable, especially to the young practitioner. The history of the author's attempts—successful so long as he continued in charge—to check the gross abuse of the Out-patient Department of the Hospital for Sick Children, is instructive for these times. It will be found on pp. 83, 84.

The Magnet Magazine. Vol. V. No. 8. Wednesday, December 9, 1896. London: James Henderson, Red Lion House, Fleet-street, E.C.

THIS is a bright, sparkling, and, in conformity with its name, *attractive* periodical. It appears weekly and is many-sided, containing scientific articles, serial stories, and much interesting and amusing information on men and manners. Its contents are safe reading for young and old, and it is neatly and artistically illustrated.

The number before us opens with an interesting article on the horseless carriage, which is described as "the vehicle of the future." Under the heading "People Talked About," an account is given of General Weyler, Commander of the Spanish Forces in Cuba. "A Day with Garrick" will interest all lovers of the stage. There is also a good article on "Sports and Pastimes." The "Magnet Magazine" is a wonderful pennyworth.

Gaceta Médica de Costa Rica. Revista Nacional de Medicina Cirugia, Farmacia é Higiene. Director, DR. CESAR BORJA.

WE welcome this, the first number of the first medical journal published in Costa Rica.

Like other Spanish-American colonies, Costa Rica passed from under the yoke of the mother-country during the reign of the feeble Ferdinand the VII.—a monarch who, more than any other member of his family, illustrated the obstinacy and unwisdom of the Bourbon.

Long-suffering Guatemala tolerated Spanish tyranny until Ferdinand, instead of rewarding her loyalty to his crown, attempted to impose a heavy taxation to fill the coffers of the Madrid Ministry. The treatment stirred up the central American peoples, and, in 1821, the patriots declared Guatemala free.

Spain was content with fulminating an episcopal anathema. Her usual weapon produced its usual effects, and Central America, after a period of local troubles, settled down to the enjoyment of freedom.

In 1826 Costa Rica, the most southern of the States of the late Confederacy of Central America, commenced measures for her future civilisation. Free schools were opened, and roads made from the coast to the capital, San José. Railways are now made across country from the Atlantic to the Pacific coast. The country is rich in minerals, flocks, coffee, grain, rubber, and fruits. From the high table-lands of the interior to the coast line the country enjoys every variety of climate, and the temperature varies in accordance with the distance from the ocean shore, passing from 100° F. on the Pacific coast to 60° F. on the table-lands.

Doñ Rafael Iglesias, the present President, the year following his election, took steps to promote the study of medicine, and the constitutional order founding "the Faculty of Medicine and Surgery of the Republic" was published on the 29th of August, 1895. In accordance with the text of the order the Faculty of Medicine publishes the *Gaceta Médica*, for which there is a public grant of money.

From the opening article we learn that the journal will give special attention to the diseases most prevalent in the country, and that meteorology and hygiene will receive due attention.

This, the first number, is largely taken up with official notices and an article setting forth the views of the editor;

withal there are several interesting original communications, and an excerpt from "La Semine Medical." The original articles include one on hydrocephalus as a cause of difficult labour; one on milk impurities; chromic acid as a test for urine; formic aldehyde as a surgical antiseptic; the sophistication of wine; animal poisons, and an account of the existing epidemic of measles.

Our contemporary has commenced well, and we wish it every success in the mission it has set before it.

Catechism Series. Forensic Medicine. Edinburgh: E. & S. Livingstone.

THIS is a remarkable book: firstly, because it is anonymous. There are but few medical writers who are so modest, or who, at any rate, have so little pride in their work as not to print their names on the title-page of their books. Then, it contains almost as many pages of advertisements as of forensic medicine, 40 of the former and only 48 of the latter. It is written in Question-and-Answer style, and is occasionally amusing:—

"Q. 'What do you mean by the terms Impotency and Sterility?' A. 'Impotence in the male; sterility in the female.'

"Q. 'What effect has Madness upon Guilt?' A. 'Madness absolves from guilt in criminal cases.'

"Q. 'Can you define Insanity?' A. 'No.'

"Q. 'What is the action of Water upon Blood-stains?' A. 'They are readily dissolved, forming a reddish solution.'"

and so on.

Its price is 1s. net, but we think it dear at that sum.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—JAMES LITTLE, M.D., F.R.C.P.I.

General Secretary—WILLIAM THOMSON, F.R.C.S.I.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—JOHNSON SYMINGTON, M.D.

Sectional Secretary—A. BIRMINGHAM, M.D.

Friday, May 22, 1896.

PROFESSOR PURSER in the Chair.

Exhibits.

PROFESSOR PURSER exhibited several microscopic specimens showing irregularities in the formation of the medullary tube in the developing chick, and several other macroscopic specimens showing errors of development in chicks, frogs, &c.

DR. A. F. DIXON showed a series of models prepared by the reconstruction method, to exhibit the development of the fifth nerve.

Genu Valgum Adolescentium.

In the unavoidable absence of the President, the Secretary read for him a communication on this subject, illustrated by a specimen, showing a condition of extreme malformation in both lower limbs. The patient, up to the age of eighteen, exhibited no signs of the deformity. At the age mentioned she went to work in a mill, and soon after the condition shown in the specimens arose. There were some signs of rickets in the upper limbs, but the

characteristic enlargements of the anterior end of the ribs were absent. The deformity was extreme, the two femurs crossing like the limbs of an X. On one side of the specimen the soft parts had been carefully dissected and preserved: owing to the deformity, all the structures at the back of the knee were shifted outwards, thus the popliteal artery lay over the outer margin of the external condyle. The sartorius and gracilis ran down over the intercondylar notch, and the tendon of the adductor magnus thus uncovered was subcutaneous. On the other side the soft parts had been removed, and coronal sections made through the lower end of the femur and the upper end of the tibia, also through the lower ends of both tibia and fibula. The upper two-thirds of the femur were quite normal. The sections showed that the lower end of the bone as well as the upper part of the tibia was the seat of rachitic disease, as indicated by the irregularity of the epiphyseal cartilage and the porous condition of the bones. The sections showed also distinctly that the marked deformity was due chiefly to the condition of the diaphyses of both femur and tibia, and to a slight extent to the unequal growth of the inner and outer parts of the epiphysis. There was comparatively little change at the ankle. The pelvis was unsymmetrically narrowed, the transverse axis being much reduced.

Professor Purser said that judging merely by the naked-eye appearances, one half of the epiphyseal cartilage appeared rachitic, and the other half normal.

Ossification of the Third Trochanter.

Dr. A. F. Dixon read a paper on the above subject. Three femora were exhibited showing a special epiphysis for the third trochanter. In each case this epiphysis is small and scale-like, and is placed just above the groove present in the region of insertion of the gluteus maximus muscle. An examination of a number of young bones leads to the conclusion that, in many cases at all events, the third trochanter in man is ossified from a special centre. The epiphysis was never found to be more than a scale-like piece of bone, even when the third trochanter was very well developed.

In lower animals, also, which possess a third trochanter, a

special centre seems to be usually present for its ossification. This is so in the horse, according to Franck, and the same is easily shown to be the case in the tapir and in certain rodents, such as the rabbit, and Cœlogenys paca.

In the rhinoceros, according to Owen, an extension of ossification takes place from the great into the third trochanter. It seems possible that even in this animal an examination of younger stages would show a centre both for the great and third trochanter, and that these unite to form a single epiphysis at a later stage. This suggestion is based on the observation that in Cœlogenys the centres for the great and third trochanter come into contact before they join the shaft of the femur.

Professor Birmingham said that Dr. Dixon's observations seemed to solve a question which was discussed some time ago by Professor Dwight and Dr. Arbuthnot Lane. The latter held that certain bony projections were produced by the pull of muscles on the bone. Among other instances he mentioned the drawing out of the gluteal ridge to form the third trochanter. Professor Dwight urged, on the other hand, that this third trochanter was a survival of the third trochanter of animals, and that it was not due to muscular pull. They only examined the bones apparently from the outside. Professor Birmingham made sections of the third trochanter and of the gluteal ridge. The third trochanter was exactly like the lesser trochanter. It consisted of a thin shell of compact tissue enclosing cancellous tissue within. The gluteal ridge was composed altogether of layers of compact bone. He came to the conclusion that Dwight's theory was correct. Dr. Dixon's observations proved this.

Dr. Davidson said that if it was a reversion, one would expect to find it more marked in the lower races.

Dr. Dixon said, in reply, that Wiedersheim stated that it was more common in the higher than in the lower races. It did not occur as frequently in the anthropoid apes as in man.

Effects of Right-handedness on Sternum.

Professor Birmingham read a paper on this subject. [It will be found at page 31.]

Prof. Purser was of opinion that right-handedness depended on the brain. The blood supply to the left brain was more direct, as was shown by the frequency of embolism on that side. In the lower classes no pains were taken to make them right-handed, still there were no more left-handed people among them than among the higher classes.

Professor Birmingham, in reply, referred to the various theories advanced to account for right-handedness. He thought none of them quite satisfactory. He agreed with Professor Purser that the cause lay in the brain.

CRYING THE EYES OUT.

The *Journal American Medical Association* is responsible for the following:—"According to the veterinary missionary Drollartin, of India, it is not an uncommon thing to see Hindoo women, one or both of whose eyes have been lost through the manifestations of grief. On inquiring the cause of all this, the usual reply is that she has lost a child, and has cried till she may be said to have cried her eyes out. 'That is,' says he, 'probably what has actually occurred in many cases. It is always a son, sometimes a husband. I never heard of a woman crying seriously for the loss of a daughter. In one case, both eyes had been lost by way of variety, for a buffalo. Buffaloes are prized above cows for their milk, as they give more milk, and of richer quality, though with something of a tallowy taste. The female acquaintances of this woman waited upon her and advised her to weep, and offered to join with her in her efforts.' They came, both young and old, some with one eye, and some with the remains of two, and some with strabismus and scarrings, and baring their heads, proceeded to form a circle with their hostess in the centre. Then all, with one accord, continued to shriek piteously for the space of two hours, while they beat their thighs and temples alternately with both hands. This is the customary mode of public mourning, though usually practised only on the death of a husband or son."

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, November 28, 1896.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Nov. 7.	Nov. 14.	Nov. 21.	Nov. 28.		Nov. 7.	Nov. 14.	Nov. 21.	Nov. 28.
Armagh -	7·0	14·0	14·0	7·0	Limerick -	16·8	18·2	22·5	19·6
Belfast -	25·2	23·3	25·4	24·3	Lisburn -	17·0	12·8	21·3	25·7
Cork -	24·2	24·2	25·6	23·5	Londonderry	25·1	22·0	17·3	17·3
Drogheda -	22·0	17·6	30·7	13·2	Lurgan -	13·7	22·8	4·6	4·6
Dublin -	25·1	26·5	28·6	31·0	Newry -	16·1	24·1	28·2	32·2
Dundalk -	20·9	8·4	8·4	25·1	Sligo -	5·1	25·4	40·6	15·2
Galway -	15·1	30·2	22·7	22·7	Waterford -	22·5	25·0	20·0	20·0
Kilkenny -	14·2	37·8	23·6	14·2	Wexford -	31·6	4·5	9·0	27·1

In the week ending Saturday, November 7, 1896, the mortality in thirty-three large English towns, including London (in which the rate was 20·2), was equal to an average annual death-rate of 20·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·3 per 1,000. In Glasgow the rate was 22·1. In Edinburgh it was 15·0.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 23·6 per 1,000 of the population, which, for the purposes of this Return, is estimated at 908,567.

The deaths, from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·9 per 1,000, the rates varying from 0·0 in seven of the districts to 8·8 in Drogheda—the 5 deaths from all causes registered in that district comprising 2 from measles. Among the 134 deaths from all causes registered in Belfast are 8 from measles, 4 from scarlatina, 2 from whooping-cough, 2 from diphtheria, 2 from enteric fever, and 4 from diarrhœa. Of the 35 deaths in Cork 1 was from enteric fever and 1 from diarrhœa. The 16 deaths in Londonderry comprise 2 from scarlatina and 1 from diphtheria. Two of the 4 deaths in Newry were from whooping-cough, and the 4 deaths in Lisburn comprise 1 from enteric fever and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 195—101 boys and 94 girls; and the registered deaths to 172—78 males and 94 females.

The deaths, which are equal to the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·7 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 25·1 per 1,000. During the first forty-five weeks of 1896 the death-rate averaged 24·0, and was 2·9 under the mean rate in the corresponding period of the ten years 1886–1895.

The number of deaths from zymotic diseases registered was 21, being 3 over the number for the preceding week, but 2 under the average for the forty-fifth week of the last ten years. The 21 deaths comprise 1 from chicken-pox, 5 from scarlet fever (scarlatina), 3 from whooping-cough, 7 from enteric fever, 2 from diarrhœa, and 1 from erysipelas.

The weekly number of cases of enteric fever admitted to hospital, which had risen from 17 in the week ended October 24, to 21 in the following week, fell to 15. Sixteen enteric fever patients were discharged, 2 died, and 115 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

Sixty-seven cases of scarlatina were admitted to hospital, against 45 in the preceding week and 40 in that ended October 24. Thirty

patients were discharged, 2 died, and 275 remained under treatment on Saturday, being 35 over the number in hospital on that day week.

Deaths from diseases of the respiratory system, which had risen from 21 in the week ended October 24, to 30 in the following week, further rose to 43, or 8 over the average in the corresponding week of the last ten years. The 43 deaths comprise 29 from bronchitis, 10 from pneumonia, and 2 from croup.

In the week ending Saturday, November 14, the mortality in thiry-three large English towns, including London (in which the rate was 19·8), was equal to an average annual death-rate of 20·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·5 per 1,000. In Glasgow the rate was 24·6, and in Edinburgh it was 23·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 24·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in eight of the districts to 9·1 in Lurgan—the 5 deaths from all causes registered in that district comprising 2 from diarrhœa. Among the 124 deaths from all causes registered in Belfast are 3 from measles, 5 from scarlatina, 6 from whooping-cough, 2 from simple continued fever, 3 from enteric fever, and 2 from diarrhœa. The 14 deaths in Londonderry comprise 1 from scarlatina and 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 170—70 boys and 100 girls; and the registered deaths to 190—80 males and 110 females.

The deaths, which are 13 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·3 in every 1,000 of the population. Omitting the deaths (numbering 12) of persons admitted into public institutions from localities outside the district, the rate was 26·5 per 1,000. During the first forty-six weeks of 1896 the death-rate averaged 24·0, and was 2·9 under the mean rate in the corresponding period of the ten years 1886–1895.

The number of deaths from zymotic diseases registered was 19, being equal to the average for the corresponding week of the last ten years, and 2 under the number for the previous week. The 19 deaths comprise 5 from scarlet fever (scarlatina), 2 from influenza and its complications, 4 from whooping-cough, 1 from diphtheria, 2 from enteric fever, 1 from diarrhœa, and 1 from erysipelas.

Twenty cases of enteric fever were admitted to hospital, being 5 over the admissions in the preceding week, but 1 under the number for the week ended October 31. Nineteen enteric fever patients were discharged, and 116 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

There has been a further increase in the number of cases of scarlatina admitted to hospital, the admissions amounting to 83, against 67 in the preceding week, and 45 in that ended October 31. Fifty-four patients were discharged, 2 died, and 302 remained under treatment on Saturday, being 27 over the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 38, being equal to the average for the corresponding week of the last ten years, but 5 under the number for the previous week. The 38 deaths comprise 24 from bronchitis and 12 from pneumonia.

In the week ending Saturday, November 21, the mortality in thirty-three large English towns, including London (in which the rate was 19·9), was equal to an average annual death-rate of 21·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·1 per 1,000. In Glasgow the rate was 23·5, and in Edinburgh it was 18·4.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 25·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·1 per 1000, the rates varying from 0·0 in eleven of the districts to 4·0 in Newry—the 7 deaths from all causes registered in that district comprising 1 from

whooping-cough. Among the 135 deaths from all causes registered in Belfast are 3 from measles, 3 from scarlatina, 1 from diphtheria, 4 from enteric fever, and 4 from diarrhœa. The 37 deaths in Cork comprise 1 from whooping-cough, 1 from enteric fever, and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 201—105 boys and 96 girls; and the registered deaths to 198—93 males and 105 females.

The deaths, which are 21 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 29·5 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 28·6 per 1,000. During the first forty-seven weeks of 1896 the death-rate averaged 24·2, and was 2·7 under the mean rate in the corresponding period of the ten years 1886–1895.

Twenty-two deaths from zymotic diseases were registered, being 1 in excess of the average for the corresponding week of the last ten years, and 3 over the number for the previous week. They comprise 7 from scarlet fever (scarlatina), 1 from typhus, 2 from influenza and its complications, 3 from whooping-cough, 1 from ill-defined fever, 1 from enteric fever, 3 from diarrhœa, and 1 from erysipelas.

The number of cases of enteric fever admitted to hospital was 18, being 2 under the admissions in the preceding week, but 3 over the number for the week ended November 7. Thirty enteric fever patients were discharged, 2 died, and 102 remained under treatment on Saturday, being 14 under the number in hospital on that day week.

The weekly number of cases of scarlatina admitted to hospital, which had risen from 45 in the week ended October 31, to 67 in the following week and 83 in the week ended November 14, fell to 46. Thirty-nine patients were discharged, 6 died, and 303 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

The hospital admissions included also 6 cases of typhus and 18 of measles. Six cases of the former and 26 of the latter disease

remained under treatment in hospital on Saturday. During the preceding week no cases of typhus and but 5 of measles had been received.

Deaths from diseases of the respiratory system, which had fallen from 43 for the week ended November 7, to 38 for the following week, rose to 55, or 17 over the average for the corresponding week of the last ten years. The 55 deaths comprise 31 from bronchitis and 18 from pneumonia.

In the week ending Saturday, November 28, the mortality in thirty-three large English towns, including London (in which the rate was 18·8), was equal to an average annual death-rate of 19·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·3 per 1,000. In Glasgow the rate was 21·6, and in Edinburgh it was 16·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 25·6 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 2·1 per 1,000, the rates varying from 0·0 in ten of the districts to 4·4 in Drogheda—the 3 deaths from all causes registered in that district comprising 1 from measles. Among the 129 deaths from all causes registered in Belfast are 4 from measles, 2 from scarlatina, 4 from whooping-cough, and 1 from enteric fever. The 34 deaths in Cork comprise 1 from typhus and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 216—104 boys and 112 girls; and the registered deaths to 212—102 males and 110 females.

The deaths, which are 30 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·6 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 31·0 per 1,000. During the forty-eight weeks of 1896, ending with Saturday, November 28, the death-rate averaged 24·3, and was 2·6 under the mean rate in the corresponding period of the ten years 1886–1895.

Twenty-four deaths from zymotic diseases were registered, being 2 over the number for the preceding week and 3 in excess of the average for the forty-eighth week of the last ten years. They comprise 1 from measles, 5 from scarlet fever (scarlatina), 1 from influenza, 7 from whooping-cough, 2 from enteric fever, 1 (in the Richmond District Lunatic Asylum) from beri-beri, and 5 from diarrhœa.

The number of cases of enteric fever admitted to hospital was 11, being 7 under the admissions in the preceding week, and 9 under those in the week ended November 14. Twenty-two enteric fever patients were discharged, 1 died, and 90 remained under treatment on Saturday, being 12 under the number in hospital on that day week.

Fifty-four cases of scarlatina were admitted to hospital, being 8 over the admissions in the preceding week, but 29 under those in the week ended November 14. Thirty-nine patients were discharged, 1 died, and 317 remained under treatment on Saturday last, being 14 over the number in hospital at the close of the preceding week. In addition, 13 convalescent patients remained under treatment in Beneavin Convalescent Home, Glasnevin.

The number of cases of measles admitted to hospital was 13, being 5 under the admissions in the preceding week, but 8 over the number for the week ended November 14. Thirty-two cases of measles remained under treatment in hospital on Saturday. Several of these cases were not true measles, but rubella or epidemic rose-rash.

The hospital admissions for the week did not include any case of typhus, 6 cases of which disease had been admitted during the preceding week.

The deaths from diseases of the respiratory system amounted to 58, being 3 over the number for the preceding week, and 14 over the average for the forty-eighth week of the last ten years. They comprise 30 from bronchitis and 18 from pneumonia.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of November, 1896.

Mean Height of Barometer,	30·156 inches.
Maximal Height of Barometer (on 24th, at 9 p.m.),	30·613 „
Minimal Height of Barometer (on 14th, at 2 30 p.m.),	29·157 „
Mean Dry-bulb Temperature,	42·3°.
Mean Wet-bulb Temperature,	40·4°.
Mean Dew-point Temperature,	38·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·232 inch.
Mean Humidity,	85·4 per cent.
Highest Temperature in Shade (on 22nd),	54·0°.
Lowest Temperature in Shade (on 6th),	26·2°.
Lowest Temperature on Grass (Radiation) (on 6th),	23·1°.
Mean Amount of Cloud,	54·7 per cent.
Rainfall (on 9 days),	·664 inch.
Greatest Daily Rainfall (on 14th),	·190 inch.
General Directions of Wind,	W. and S.W.

Remarks.

A fine, quiet, rather cold month. The scanty rainfall in Dublin—only ·664 inch on 9 days—established a record for November. The barometer ruled high, and a large anticyclone embraced the British Islands, the North Sea and Central Europe, between the 21st and 30th. At first W. or S.W. winds, clouds, and warmth accompanied this system, but it moved northwards and the easterly winds of its southern face brought with them an unusually dry, cold, searching atmosphere, together with a clear sky.

In Dublin the arithmetical mean temperature (43·2°) was decidedly below the average (44·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 42·3°. In the thirty-one years ending with 1895, November was coldest in 1878 (M. T.=38·2°), and in 1870 (M. T.=42·2°), warmest in 1881 (M. T. = 50·3°).

The mean height of the barometer was 30·156 inches, or 0·296 inch above the corrected average value for November—namely, 29·860 inches. The mercury rose to 30·613 inches at 9 p.m. of the 24th, having fallen to 29·157 inches at 2 30 p.m. of the 14th. The observed range of atmospheric pressure was, therefore, 1·456 inches—that is, slightly less than an inch and a half.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 42·3°, or 1·5° below the value for October, and 12·1° below that for September, 1896. The arithmetical mean of the maximal and minimal readings was 43·2°, compared with a twenty-five years' average of 44·7°. On the 22nd the thermometer in the screen rose to 54·0°—wind, S.W.; on the 6th the temperature fell to 26·2°—wind, W. The minimum on the grass was 23·1°, also on the 6th.

The rainfall was only ·664 inch, distributed over 9 days—the rainfall and the rainy days were considerably below the average, a record being established. The average rainfall for November in the twenty-five years 1865–89, inclusive, was 2·452 inches, and the average number of rainy days was 17·0. In 1888, 6·459 inches fell on 26 days. On the other hand, the rainfall in 1889 was only ·929 inch on 9 days. In 1895, 3·582 inches fell on 21 days.

High winds were noted on 7 days, and attained the force of a gale on two occasions—the 15th and 28th. The atmosphere was more or less foggy in Dublin on the 4th, 5th, 6th, 9th, 16th, 17th, 22nd, and 24th.

Lunar halos were seen on the 13th and 19th; solar halos on the 4th and 9th.

During the week ended the 7th, cold but fine weather prevailed until Saturday, which was a dull, damp, rainy day. At the beginning of the period an anticyclone advanced over Scotland and Ireland from the Atlantic, while various areas of relatively low pressure were found over Scandinavia and Central Europe, having a general trend towards S.E. Northerly winds with fine, but at times cloudy, weather held in Ireland, while rain fell in the E. and S.E. of England. On Tuesday a rather deep depression (29·4 inches and less) travelled southwards across Central Europe from the Baltic. In its rear the weather became very cold owing to a

snow-covering in Scandinavia. A ridge of high pressure now developed over Ireland, England, and Germany, so that on Thursday morning the barometer read 30·63 inches at Berlin, 30·61 inches at York, and 30·58 inches at Loughborough, Liverpool, and Dublin. Calms, fogs, and very sharp night-frosts accompanied the high pressure. On Thursday night the screened thermometer sank to 23° at York, Loughborough and Parsonstown, 25° at Cambridge and 26° in Dublin. On Friday morning a vast depression was moving eastward across the North of Norway and spreading southwards at the same time. At 8 a.m. the barometer varied from 28·82 inches at Bodö in Norway to 30·52 at Berlin. Strong W. and S.W. winds accordingly set in, with clouds, rain, and a quickly rising temperature. Saturday was a very dull, damp day in Dublin, the change from the almost cloudless skies of the frost period being very marked. The mean height of the barometer was 30·194 inches, the range being from 30·582 inches at 9 a.m., of Thursday (wind, W.) to 29·775 inches at 2 p.m. of Saturday (wind, W.N.W.). The mean temperature was 39·1°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 37·8°. On Friday the screened thermometers sank to 26·2°, on Saturday they rose to 50·5°. The prevalent winds were W.N.W. and W. Rain fell on two days to the amount of ·290 inch ·170 inch being registered on Saturday. A solar halo was seen on Wednesday.

The earlier part of the week ended Saturday the 14th was fine but cold, with moderate northerly to westerly winds. A complete reversal of the conditions of distribution of atmospheric pressure over Western Europe took place as the period advanced. At first the barometer stood high in Ireland, where the gradients were moderate for northerly winds. Between Monday and Thursday an anticyclone moved slowly south-eastward from this country to Central France, the fall of the barometer in the W. and N.W. substituting southerly for northerly winds in the British Islands. On Friday morning a large V-shaped depression extended from the Hebrides to the Land's End, and on Saturday a still more important and deeper system of low pressure passed across Ireland in a north-easterly direction, causing squally S. to W. winds and heavy rains or passing showers. Scandinavia, and the extreme North of

Europe generally, experienced very intense cold for the time of the year. This was due to the fact that a good deal of snow lay on the ground in those regions. At Haparanda, on the Gulf of Bothnia, the minimal temperatures were daily below zero, namely, —5° (?), —8°, —4°,—8°,—8°, —9°, and —11° respectively. At Karlstad in the south of Sweden the thermometer read +5° at 8 a.m. of Friday. In Dublin the mean height of the barometer was 29·991 inches, pressure ranging from 30·414 inches at 9 a.m. of Monday (wind W.N.W.) to 29·157 inches at 2 30 p.m. of Saturday (wind S.W.). The mean temperature was 43·7°, or 4·6° above that of the previous week. The mean dry bulb reading at 9 a.m. and 9 p.m. was 43·0°. On Monday the screened thermometers fell to 29·9°, on Friday they rose to 52·8°. The rainfall was ·221 inch on two days, ·190 inch being measured on Saturday. The prevailing winds were first N.W., then S. to W.

Although changeable, the weather of the week ended Saturday, the 21st, was generally favourable, and no extremes were recorded. On Sunday cyclonic conditions prevailed. A depression in which the barometer read 29·20 inches or less lay off the Norfolk coast at 8 a.m., while another and deeper low pressure system (29·00 inches and less) was found over the N.W. of Scotland, travelling south-eastwards. N.W. to N. winds of considerable strength blew in Ireland, where also rain fell in the forenoon. By 8 a.m. of Monday the Scottish centre of low pressure had reached Normandy, and the barometer had risen in all parts of the British Isles, with improving weather. On Tuesday morning a tongue of relatively high atmospheric pressure stretched south-westward from the S. of Sweden to the S.E. of Ireland. Frost prevailed in Dublin, as well as fog. A complex depression quickly came in from the Atlantic as the day advanced, and rain fell at night, the thermometer rising to 52·8° in Dublin, with S.W. to W. winds. The remainder of the week was chiefly fine, but not settled. During Friday and Saturday an anticyclone spread over the British Islands from S.W.. and temperature became high for the time of year with a good deal of cloud and but little rain. In Dublin the mean height of the barometer was 30·002 inches, pressure ranging between 29·338 inches at 9 a.m. of Sunday (wind, W. by N.), and 30·461 inches

at 9 p.m. of Saturday (wind, W.S.W.). The mean temperature was 44·5°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 43·7°. On Tuesday the screened thermometers sank to 32·0°, on Wednesday they rose to 52·8°. Rain fell on three days to the amount of ·132 inch, ·079 inch being registered on Tuesday. There was a moderate gale on Sunday. Some fog prevailed on Monday and Tuesday. A lunar corona was seen on Wednesday and a lunar halo on Thursday.

Anticyclonic weather was experienced throughout the greater part of the week ended Saturday, the 28th. A broad band of high atmospheric pressure stretched across Central Europe early in the period, and afterwards slowly drifted northwards in front of a succession of depressions which formed in the Mediterranean Basin and over the Peninsula. The distribution of pressure just described caused S.W. and W. winds and resultant high temperatures in Ireland, Scotland, and Scandinavia, E. and N.E. winds and much lower temperatures in Austria, Germany, France, and the S.E. and E. of England. On Sunday the thermometer in the screen rose to 54° in Dublin, 55° at Leith and Donaghadee, and 56° at Parsonstown, Aberdeen, and Nairn—even as far north as Christiansund in Norway (Lat. 63°) the maximum on this day was 54°. Slight rain fell at various points in the British Isles between Monday and Thursday, but the weather was generally dry although overcast, dull and misty or foggy. The ridge of high barometer gradually moved northward, so that easterly winds took the place of the westerly winds of the beginning, and the calms of the middle, of the week. With the easterly winds came a considerable reduction of temperature to the Continent and the southern half of the United Kingdom. On Friday the anticyclone showed a remarkable lessening of its intensity. Its centre was then found over Scotland, where the barometer began to rise while it continued to fall over France and the Bay of Biscay. Steep gradients for easterly winds were in this way formed, so that the wind freshened to a gale from E. on Saturday with cold showers at exposed east coast stations. In Dublin the mean height of the barometer was 30·416 inches, pressure ranging from 30·613 inches at 9 p.m. of Tuesday (wind, S.S.E.) to 30·004 inches at 9 a.m. of Saturday (wind, E.N.E.).

The mean temperature was 46·4°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45·6°. On Sunday the screened thermometers rose to 54·0°, on Thursday they fell to 42·1°. Rain fell on two days to the amount of ·021 inch, ·012 inch being measured on Tuesday. The prevailing winds were W.S.W. and E.N.E.

The last two days were bright, cold, and very dry. Severe frost occurred in England on Monday, the 30th, when the thermometer read 20° in the screen at Loughborough at 8 a.m.

The rainfall in Dublin during the eleven months ending November 30th amounted to 22·716 inches on 174 days, compared with 15·378 inches on 141 days during the same period in 1887, 27·750 inches on 191 days in 1894, 27·298 inches on 167 days in 1895, and a twenty-five years' average of 25·292 inches on 177·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in November was ·805 inch, distributed over 10 days. Of this quantity ·300 inch fell on the 14th, and ·260 inch fell on the 13th. From January 1st, 1896, up to November 30th, rain fell at that station on 147 days, and to the total amount of 28·642 inches. The corresponding figures for 1893 were 19·586 inches on 150 days, for 1894, 35·716 inches on 168 days, and for 1895, 31·715 inches on 151 days.

At Cloneevin, Killiney, Co. Dublin, ·58 inch of rain fell on 9 days, compared with a ten years' average of 2·737 inches on 17·6 days. The maximal fall in 24 hours was ·23 inch on the 14th. Since January 1st, 1896, 26·31 inches of rain have fallen at this station on 159 days.

NEW CAUSE OF LEAD POISONING.

At a meeting of the Paris *Société de Biologie*, M. Charcot described a case of saturnine poisoning in a woman, 32 years of age, whose employment was the manufacture of artificial flowers. It was her business to roll green silk paper round the flower-stalks. During the process she had frequently to moisten her finger-tips with her tongue. The paper was found to contain salts of lead in considerable quantity.

PERISCOPE.

DISINFECTION OF APARTMENTS.

In some recent experiments by the health department of one of the largest American cities, where it might be supposed disinfection had been reduced to a science, it was found that cultures of the potato bacillus, B. mesenterica, exposed in apartments undergoing sulphur dioxide fumigation, were growing vigorously when returned to the laboratory. Dr. Miguel has made a series of experiments on this subject, the reports of which are published in *Les Annales de Micrographie*, and from which it appears that the commonly used disinfectants, such as phenol, thymol, sulphurous acid and naphtholene, are either ineffectual or very expensive. Carbolic acid, for instance, is about as active as alcohol or brandy, and less so than vinegar. The vapours of acetic acid are very active, but too expensive for ordinary use. Essential oils appear to be about as active as phenol. Concentrated aldehyde, in 1 to 2 per cent. solutions, should be used, exposed in shallow dishes and allowed to disengage their vapour slowly for several days. Another plan recommended is to burn methyl alcohol slowly in lamps surrounded with platinum gauze. Very penetrating vapours of aldehyde are disengaged, which do not alter metals or the colours of textile fabrics, while acting efficiently as a disinfectant.—*Jour. Am. Med. Assoc.*

FOOD OF SCHOOLBOYS.

A paper was read last year before the Medical Officers of Schools Association, on "Meals and Food for the Schoolboy," by Dr. Horace Savory, the resident medical officer of Haileybury College. The Association ordered it to be printed, and we have been favoured with a copy. It is a practical paper, with elaborate diet-tables. We do not quite see the necessity of eating "before lessons commence." "Boys have told me they don't care for food at this time, they don't feel hungry; others say it spoils their breakfast; and the

meal is partaken of by a few small boys only." Quite so; but Dr. Savory insists. Our own views on the subject of school dietetics are revolutionary; or perhaps we should say reactionary. Never mind grains of albuminates and fats. Give healthy boys as much plain food—bread and milk, and good meat, with vegetables or fruit, once a day—as they are disposed to eat. Honest unskimmed milk is better for them than sloppy tea, or coffee, or even cocoa. Good water is a better dinner drink than washy beer. Discourage "grub-shops," and the home hamper. Translate the motto on the pamphlet *Maxima debetur ventri reverentia* (which probably would surprise Juvenal) "Plain food and plenty of it."

ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

The American Pedriatic Society have carried out a collective investigation into the use of Antitoxin in the treatment of Diphtheria in private practice. Reports were returned from 615 physicians with 3,628 cases. In about two-thirds the diagnosis was confirmed by culture, and in some other cases no doubt as to diagnosis existed. In all there were 3,384 certain cases, and these alone were analysed.

The following is a summary of the report:—

1. The report includes returns from 615 physicians. Of this number more than 600 have pronounced themselves as strongly in favour of the serum treatment, the great majority being enthusiastic in its advocacy.

2. The cases included have been drawn from localities widely separated from each other, so that any peculiarity of local conditions to which might be ascribed the favourable reports must be excluded.

3. The report includes the record of every case returned except those in which the evidence of diphtheria was clearly questionable. It will be noted that doubtful cases which recovered have been excluded, while doubtful cases which were fatal have been included.

4. No new cases of sudden death immediately after injection have been returned.

5. The number of cases injected reasonably early in which the

serum appeared not to influence the progress of the disease was but 19, these being made up of 9 cases of somewhat doubtful diagnosis; 4 cases of diphtheria complicating measles, and 3 malignant cases in which the progress was so rapid that the cases had passed beyond any reasonable prospect of recovery before the serum was used. In two of these the serum was of uncertain strength and of doubtful value.

6. The number of cases in which the patients appeared to have been made worse by serum were three, and among these there is only one new case in which the result may fairly be attributed to the injection.

7. The general mortality in the 5794 cases reported was 12·3 per cent.; excluding the cases moribund at the time of injection or dying within twenty-four hours, it was 8·8 per cent.

8. The most striking improvement was seen in the cases injected during the first three days. Of 4120 such cases the mortality was 7·3 per cent.; excluding cases moribund at the time of injection or dying within twenty-four hours, it was 4·8 per cent.

9. The mortality of 1448 cases injected on or after the fourth day was 27 per cent.

10. The most convincing argument, and to the minds of the committee an absolutely unanswerable one, in favour of serumtherapy is found in the results obtained in the 1256 laryngeal cases (membranous croup.) In one-half of these recovery took place without operation, in a large proportion of which the symptoms of stenosis were severe. Of the 533 cases in which intubation was performed the mortality was 25·9 per cent., or less than half as great as has ever been reported by any other method of treatment.

11. The proportion of cases of broncho-pneumonia—5·9 per cent.—is very small and in striking contrast to results published from hospital sources.

12. As against the two or three instances in which the serum is believed to have acted unfavourably upon the heart might be cited a large number in which there was a distinct improvement in the heart's action after the serum was injected.

13. There is very little, if any, evidence to show that nephritis

was caused in any case by the injection of serum. The number of cases of genuine nephritis is remarkably small, the deaths from that source numbering but fifteen.

14. The effect of the serum on the nervous system is less marked than upon any other part of the body; paralytic sequelæ being recorded in 9·7 per cent. of the cases, the reports going to show that the protection afforded by the serum is not great unless injections are made very early.—*Medical News*, New York, July 4th, 1896.

COLD BATHS IN ENTERIC FEVER.

At the August meeting of the Canadian Medical Association, (reported in the *Canadian Practitioner*), Dr. W. Osler gave the results of five years' experience of the use of the cold bath in enteric fever. "He stated that he had not followed Brandt's method to the letter of giving the plunge bath to all cases. In markedly asthenic cases, in very mild cases, and in those with serious complications, the bath was not used. These constituted 58 cases out of a total of 356. In the 298 bathed cases the death-rate was 6·3 per cent.; in the other cases 10·2 per cent. Of course it was not to be forgotten, in considering these statistics, that hospitals were given the worst cases. In the bathed cases no other treatment was employed except where there was cardiac weakness, when strychnia and alcohol were administered."

SYMPHYSEOTOMY IN THE UNITED STATES.

The *Occidental Medical Times* quotes the following from the *American Gynæcological and Obstetrical Journal*:—Robert P. Harris has collected all the cases in which symphyseotomy has been performed in the United States, and finds there have been 74 operations up to May 1, 1895. Of these 74 women 10 died, and of the children 18 were lost. It was found that Cæsarean section is less fatal to children, but far more fatal to mothers. The danger to the mother in symphyseotomy does not lie so much in the pubic section as in injuries produced upon the urethra, vagina, and uterus, in the forcible delivery of the fœtus by the forceps, and the forcing open of the symphysis by the passage of the head under traction. Harris says that in Vienna the capa-

bilities of the forceps for doing injury have been demonstrated to such a degree as to have reacted against symphyseotomy, in favour of Cæsarean section. The general mortality of symphyseotomy in all countries, taken collectively, is 34 in 303, or over 11 per cent. In the United States so far it is 10 in 74, or 13·5 per cent.

MEDICAL STUDENTS IN ITALY.

There were 19,048 medical students registered in Italy in 1894-95. The number of universities is twenty-one, and the number of students registered at the various universities varies from 3,697 at Naples to 87 at Milan. The percentage of medical students to the population is about 61 per 100,000 inhabitants. In France it is 57 per 100,000, and in Germany 63 per 100,000. In Italy, university education is chiefly supported by the State, the students paying only a yearly tax of 200 or 300 francs. According to the latest statistics, after subtracting the tax paid by the students, each student cost annually to the State a sum which varies from a minimum of 215 francs at the University of Naples to a maximum of 1,408 francs at the University of Siena. It appears from the returns that the larger the number of students at a university, the smaller the annual expenses for their education.—*Med. Rec.*

POSTURE IN SLEEP.

The natural attitude adopted by young children when free to do as they please with their bodies and limbs is interesting. Puppies and kittens lie curled up during sleep just as they did before they were born. In nine cases out of ten, young children when old enough to control their limbs and unfettered by clothing or cover, draw up their legs and bend their heads over in their arms. Of course the trouble is in too many cases that our children are not allowed to sleep according to their natural inclinations, d mothers and nurses interfere with the position most convenient for them. But if you observe how babies sleep in warm climates, where they are not bothered with much clothing, you will find them sleeping in the natural position. Whether they sleep on mats

of grass, on the warm earth, or in hammocks, the children lie in the curled-up position. After a while boys and girls of four or five years of age slightly change their attitude during sleep. They now lie on the side, face also on the side, and with the legs drawn up, using one of the arms as a pillow. This is the position assumed by the higher orders of monkeys in their sleep. It is not until boys and girls grow up that they stretch out their limbs full length in sleep. The lower orders of monkeys sleep in the crouching position, with the head bent down upon the knee. There is one position during sleep that is peculiar to human beings. It is lying flat upon the back. No animal of its own choice takes such a position in sleep. One of the keepers at Central Park who has excellent opportunities for watching the animals there says that he has never found the apes sleeping upon their backs. We all know the usual disagreeable results of sleeping on the back. A person in sleep will often roll over flat, whereupon he or she sees strange sights and hears odd noises. Many a time I have seen mothers and nurses go to the child on its back, muttering or crying in sleep, and then gently turn the dreamer over on the side. The right side is preferred by many people, while some find the left side comfortable.—*Med. Rec.*

CYST OF URACHUS.

Dr. Newman describes (Glasgow *Medical Journal*, July, 1896) a cyst of the urinary bladder, probably arising from the urachus; it extended from the apex of the bladder to the umbilicus.

BRADYCARDIA.

At a meeting of the Ontario Medical Association—we quote from *The Canadian Practitioner*—Dr. Dewar, of Essex, presented two patients, in the first of whom the pulse had been down to 22 for a considerable length of time—falling even to 16, and unaffected by exercise. For two years the patient, a man of 63, had suffered from indigestion and general debility with epileptoid seizures. The pulse of the second case was 25 to the minute. He gave a history of *petit mal*, but otherwise enjoyed fair health.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Tabloids of Cascara and Belladonna.

Messrs. Burroughs, Wellcome & Co., Snow Hill Buildings, London, E.C., have added to their already long list of "Tabloids" what seems to us a very useful and appropriate combination in cases of habitual constipation. These "tabloids" are prepared according to the following formula:—Cascara sagrada extract, 2 grs.; nux vomica extract, $\frac{1}{4}$ gr.; belladonna, $\frac{1}{3}$ gr.; powdered capsicum, $\frac{1}{2}$ gr. This combination, containing intestinal stimulant, tonic and laxative ingredients, is suggested for use in the habitual constipation of delicate persons with feeble digestive organs. It is well known that cascara sagrada is unsuited for use as an occasional purge, but gives the best results when administered systematically. The dose of the combination before us should begin with one "tabloid" after food, once daily, and be increased, if necessary, until two "tabloids" are taken thrice daily. This dose should be maintained until the habit of regular action is established, when the number should be gradually reduced and at length discontinued. Cascara sagrada and belladonna "tabloids" being sugar-coated and elegant in appearance, are taken readily by the most fastidious. They are issued in bottles containing 25 and 100.

Residuum Rubrum "Tabloids." (B. W. & Co.)

These "tabloids," prepared from the carefully-dried red residue of venous or arterial blood, have been under trial for some time in the treatment of osteo-arthritis and other diseases, in which there is an absence in the patient's blood of the normal secretions of the various ductless glands. In a recent paper on "Blood as a Therapeutic Agent," a physician to the Liverpool Stanley Hospital reports the beneficial results of his trials of this drug in a series of cases of osteo-arthritis treated during a period of more than eighteen months. After the usual treatment had proved ineffectual, residuum rubrum "tabloids," prepared from venous blood, were administered in several cases with beneficial effect. They were given in doses of twelve 5-grain "tabloids" taken during the twenty-four hours.

The "tabloids" made from the residue of arterial blood are also undergoing careful clinical trial. Both varieties are supplied by Messrs. Burroughs & Wellcome in bottles containing 100 "tabloids."

NESTLE'S FOOD

An Entire Diet for Infants, Children, and Invalids.

"Renders valuable assistance in Wasting Fever."

"Beneficial as a diet in severe cases of Typhoid."

"Invaluable in Cholera Infantum."

Pamphlet containing Extracts from Standard Medical Works in which the above Testimony is given sent free, with Sample Tin, on application to
H. NESTLÉ,
48 Cannon-street,
London,
E.C.

The attention of the Medical Profession is also drawn to

NESTLE'S SWISS (CONDENSED) MILK

Which, through its RICHNESS in CREAM and UNIFORMITY of QUALITY, has obtained the Largest Sale in Great Britain.

It can be used for all purposes of FRESH MILK.

Samples to Members of the Medical Profession only sent free on application to H. NESTLÉ, 48 Cannon-street, London, E.C.

New Student's Refraction Ophthalmoscope.

Designed by H. Rosborough Swanzy, A.M., M.B, F.R.C.S.I.;
Author of "A Handbook of Diseases of the Eye."

Instrument reversed in Case.

Price 30s.

This Ophthalmoscope was designed by Mr. Swanzy, to provide Students at the National Eye and Ear Infirmary with a well-made and useful instrument at a low price. It is a Refraction Ophthalmoscope, and, by a combination arrangement, provides + and — lenses from 1D to 19D. There is a conclave and a plane mirror on a reversible spring mount, and a + 14·0D object lens. In connection with the sight hole of the mirrors there is a special arrangement peculiar to this Ophthalmoscope, which entirely does away with any defraction from the edge of the hole, a defect that is so common in Ophthalmoscopic Mirrors, and one which interferes greatly with the easy use of them. This arrangement, as well as the instrument as a whole, has been patented. The Ophthalmoscope is contained in a neat hard rubber case, which will fit in the waistcoat pocket. Although originally designed for the use of students, yet this instrument is amply sufficient for practitioners, and even for specialists.

FANNIN & CO., Ltd., 41 Grafton-street, Dublin.

SCOTT'S EMULSION

Is Manifestly The Standard Emulsion of Cod Liver Oil.

We say "manifestly" because it has more generally the indorsement of the medical fraternity than has any other preparation of cod liver oil.

Physicians have found by personal observation that it is a reliable emulsion—probably Scott's Emulsion is prescribed more often than all other forms of cod liver oil combined.

To tell physicians who have prescribed it why this is so, is unnecessary—to those who have never given it a test, we shall be pleased to deliver a sample free.

FORMULA: 44% of the finest Norwegian Cod Liver Oil; 16% of best chemically pure Glycerine; 6 grains of Hypophosphites of Lime; and 3 grains of Hypophosphites of Soda to each fluid ounce.

SCOTT & BOWNE, Ltd.,

47 Farringdon Street, London, E.C.

Every Medical Man

The SWAN FOUNTAIN PEN

Should Have One.

POST FREE:

10/6. 16/6. 25/-.

Universally known as the most perfect and useful of Reservoir Pens

Catalogues Free on application to the renowned Gold Pen Makers.

MABIE, TODD, & BARD,

93 CHEAPSIDE, **LONDON, E.C.**

And all Stationers.

SET OF TROCARS AND CANNULÆ,

FOR PERFORMING

Paracentesis Thoracis by Dr. Henry FitzGibbon's Improved Method.

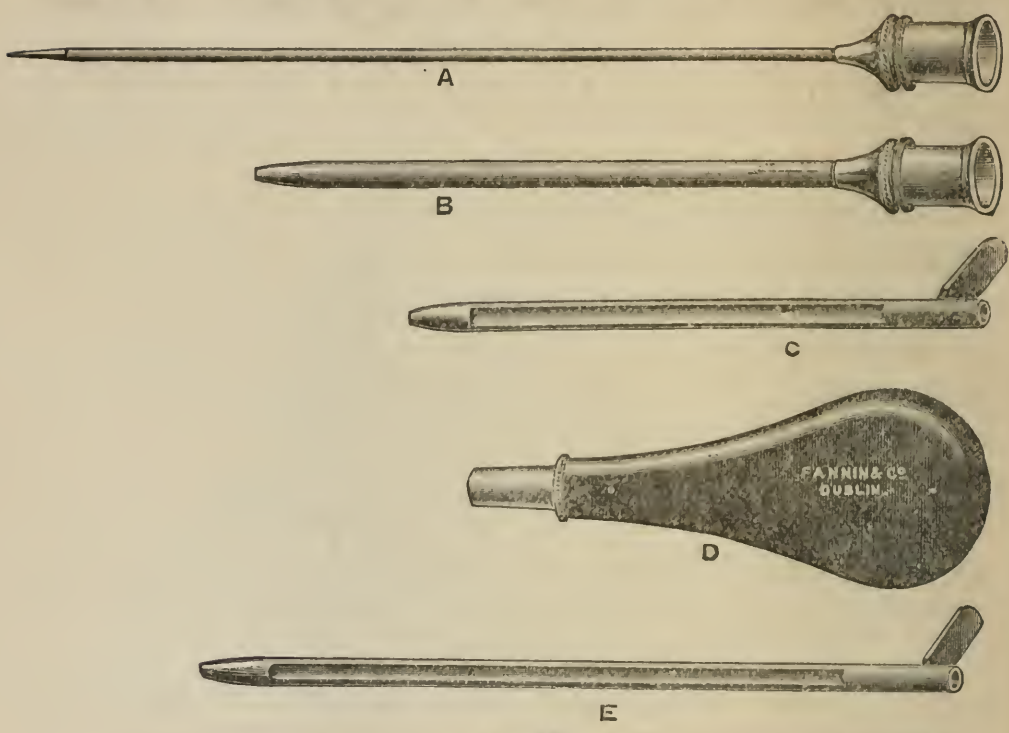


FIG. A represents an ordinary Aspirator Trocar. FIG. B, the Aspirator Cannula belonging to it. FIG. C. Cannula, with Director Groove made to fit accurately over A and B together. FIG. D. The Handle. FIG. E. Director Cannula, fitting the Trocar A only.

DR. FITZGIBBON writes:—"The difficulty which occasionally arises in deciding with certainty whether a pleuritic effusion has resolved itself into an empyema or not often places the surgeon in the position of having to withdraw an Aspirator Cannula in order to open the pleural cavity freely for drainage and irrigation. Once the Cannula is withdrawn it is not always easy to get a director to follow the same track into the pleural cavity, as the relative positions of the skin, fascia, and pleura are apt to be altered by the escape of the fluid and by a change in the position of the patient."

In order to obviate this difficulty, Dr. H. FitzGibbon has designed the instrument represented in the accompanying woodcuts, and he has found it to facilitate the introduction of the drainage tubes into the thorax very much, and to enable the operation to be performed much more rapidly than is possible without its aid.

The Trocar A being put into the Cannula B, the Director Cannula C is passed over both, and the handle put in situ.

A slight skin incision may be made at the point that it is proposed to tap the thorax, and the Trocar plunged through in the usual manner, and then withdrawn, leaving the Director Cannula in. If the fluid which escapes proves to be serum, it can be allowed to flow off, or be aspirated, as the operator thinks fit, but if it proves to be purulent, and it is necessary to make a free opening for the drainage and irrigation of empyema, the Cannula is withdrawn, leaving the grooved Director Cannula in the cavity, which can be rapidly opened as freely as is thought necessary, by running a bistoury or a scalpel along director to the stop at the end, and cutting into the direction of the intercostal space as the knife is withdrawn.

Figure E is a Director Cannula which Dr. H. FitzGibbon uses in cases where there is no doubt of the existence of an empyema, and in which a free opening is to be made without exploration.

Dr. H. FitzGibbon says that Messrs. Fannin & Co have made several of these instruments very neatly for him, and it is essential that the Director Cannula be made to fit accurately, and gently tapered at the point to prevent it from pushing the costal pleura before it. When skilfully made he has found the instrument a most valuable assistance in opening the thorax for drainage and irrigation.—Extract from the *British Medical Journal*, June 6th, 1896.

Price **10/-** *; or in neat Leather Case,* **12/6.**

FANNIN & COMPANY, LTD.,

41 Grafton-street, Dublin,

Surgical Instrument Makers, Chemists, Opticians, and Medical Booksellers.

TELEGRAMS: **"Fannin, Dublin."** TELEPHONE **198.**

Hunyadi János

BEST AND SAFEST NATURAL APERIENT.

25 Years' Success in the United Kingdom.

RECOMMENDED and PRESCRIBED by MEDICAL MEN EVERYWHERE.

"HUNYADI JÁNOS has established itself in favour with leading physicians and therapeutists of every country, whose testimonies bear witness to its action as a speedy, sure, and gentle Aperient for ordinary use; it is remarkably and exceptionally uniform in its composition, and free from defects incidental to many other Hungarian Bitter Waters."—*British Medical Journal*, Aug. 30th, 1884.

PROFESSOR VIRCHOW, the celebrated Berlin Physician, says that "HUNYADI JÁNOS" has always given him prompt and satisfactory results, and he considers it to be "one of the most valuable of the Curative Agents at our disposal."

CAUTION—Every Bottle bears the Signature of the Proprietor, ANDREAS SAXLEHNER.

Bullock's Pepsina Porci. DOSE—2 to 4 grains

Acid Glycerine of Pepsine. DOSE—1 to 2 drms. (Bullock).

In this preparation advantage has been taken of the solubility of Pepsine in Glycerine to produce a convenient and desirable *liquid form* of this valuable medicine; whilst the preservative qualities of the menstruum confer upor the Acid Glycerine of Pepsine the property of keeping for any length of time.

May be prescribed with most substances compatible with Acids.
In 4-oz., 8-oz., and 16-oz. Bottles, and in Bulk.

The published experiments of G. F. DOWDESWELL, Esq., M.A., Cantab., F.C.S., F.L.S., &c., Dr. PAVY, Professor TUSON, the late Professor GARROD, Dr. ARNOLD LEES, and others, conclusively demonstrate the excellence, high digestive power, and medicinal value of the above preparations.

J. L. BULLOCK & CO.,

3 Hanover-street, Hanover-square, London, W.

National Calf Vaccine Institute,

SANDYMOUNT GREEN, DUBLIN.

Medical Director:

J. Knox Denham, L.R.C.P. & S.I., Medical Officer of Health, Pembroke Township.

Bacteriologist:

E. J. M'Weeney, M.D.; Professor of Pathology in the Medical Faculty of the Catholic University; Examiner R.U.I.

Veterinary Inspector:

John Freeman, F.R.C.V.S.; Examiner Royal College of Veterinary Surgeons, England.

Wholesale Agents:

Fannin & Co., Limited, Grafton-street.

Oppenheimer, Son & Co., Ltd., Worship-street, London, E.C.

MANY Members of the Medical Profession, as well as a large majority of the educated lay public, are of opinion that there are weighty reasons why lymph derived directly from the calf should be used for vaccination in preference to that obtained from the human subject. Inoculation with calf vaccine is very generally looked upon as free from the objections urged against the use of humanised lymph. In an agricultural country like ours there are special facilities for obtaining pure calf lymph, and yet there has hitherto existed in Ireland no Institution whence such lymph could be procured by the Medical Profession.

To meet the want thus found to exist Dr. Denham has visited the principal centres for the collection of calf lymph on the Continent and in England, has studied the most approved processes for the collection, purification, storage, and exportation of the lymph, and has procured the apparatus necessary for its production in the greatest perfection.

The valuable services of Mr. Freeman having been secured, he will examine the calves proposed to be used, and only those which present evidences of perfect health will be selected.

Professor M'Weeney will subject all the lymph to bacteriological examination with a view to controlling its purity, its method of preservation, and its general suitability for vaccination purposes.

Dr. Denham believes that, by the aid of these precautions, the Medical Profession will be placed in a position to confer immunity against Small-pox without risk to the patient, and with the least possible delay and inconvenience.

The lymph is made in the following preparations:—

One large Ivory Point, to vaccinate 1 person	...	Price 0s. 6d.
One Tube, to vaccinate 4 persons	...	,, 1s. 0d.
Do., to vaccinate 20 ,,	...	,, 2s. 6d.
Conserve, to vaccinate 20 persons	...	,, 2s. 6d.

These preparations can be obtained from Fannin & Co., Ltd., 41 Grafton-street, and all Chemists.

Lactopeptine in Powder and Tablets.
—The most approved remedy in Dyspepsia, Anæmia, Intestinal and Wasting Diseases, Cholera Infantum, Vomiting in Pregnancy. LACTOPEPTINE TABLETS have the same formula as LACTOPEPTINE POWDER; and LACTOPEPTINE POWDER has been a favoured prescription of the Medical Profession for twenty years. LACTOPEPTINE TABLETS are sold at the same price as LACTOPEPTINE IN POWDER (which will still be supplied as usual). There are five grains to a tablet, consequently the dose is easily regulated. The convenience of this method, by which a dyspeptic for whom LACTOPEPTINE is prescribed can carry his medicine in a pocket, exactly like a lozenge, and take it, without observation, immediately after eating, will be evident to all prescribers. Dose: for adults, two to four tablets; for children, one or two tablets.

Lancet.—"We have proved its digestive powers."

British Medical Journal.—"Fully up to date."

Medical Press and Circular—"We can highly recommend this new form."

Medical Times and Hospital Gazette.—"Everything that the science of pharmacy can do for the improvement of the manufacture of pepsin, pancreatine, and diastase has been quietly applied to these ferments as compounded in LACTOPEPTINE."

Edinburgh Medical Journal.—"The most convenient form for administering this most valuable medicine."

Birmingham Medical Review.—"LACTOPEPTINE TABLETS, a convenient form of this undoubtedly valuable preparation."

As a physician's remedy, LACTOPEPTINE is dispensed by chemists as a matter of course, like quinine, or any other drug in common use, and can be procured by patients just as readily, where it is desirable that it should be so ordered, in 1-oz. original bottles, containing 48 ten-grain doses, or 96 five-grain tablets. LACTOPEPTINE is a specific in all disorders of the stomach and digestive tract arising from dyspeptic causes. It should be tested in severe cases of indigestion, and in cholera infantum, malnutrition, and vomiting in pregnancy.

Prices of LACTOPEPTINE, whether in powder or tablets, to the Medical Profession: 1-oz. bottles (retailed at 4/6), 45/- per dozen; 1-oz. bottles (unstamped) for Dispensing, 39/- per dozen; postage on a single ounce (extra), 3d.; 4-oz. bottles (unstamped), for Dispensing, 10/6 each; carriage paid, 10/9; 8-oz. bottles (unstamped), for Dispensing, 20/6 each; carriage paid, 20/11, JOHN MORGAN RICHARDS, 46 Holborn Viaduct, London, E.C. Telegrams: "ADRIATIC, London."

GODFREY'S CHLORIDE OF AMMONIUM

INHALER.

LOSS OF VOICE,
THROAT AND EAR
AFFECTIONS,
HAY ASTHMA.

Price, retail, 7s. 6d.

Profession, 5s.;
Post, 6d. extra.

Prospectus free by Post.

Sole Makers—GODFREY & COOKE, 30 Conduit Street, Bond Street, W.

DIABETES.

VAN ABBOTT'S GLUTEN BREAD & BISCUITS, SOYA BREAD, BISCUITS, and all suitable foods for Diabetic Patients, sweetened with Saccharin or plain, as supplied to H. M. Royal Military and Naval; London, Provincial and Colonial Hospitals, &c.

Delicate Children.

VAN ABBOTT'S HYPOPHOSPHITE OF LIME BISCUITS. Suggested and recommended by W. ADAMS, F.R.C.S., of the Orthopædic and Great Northern Hospitals.

OBESITY.

KALOS BISCUITS (free from Drugs, Chemicals and Sea Weeds) and other Special Foods for Obesity, as supplied to the Royal Family and Leading Members of the Aristocracy.

VAN ABBOTT'S DIGESTIVE BISCUITS, particularly recommended for Ladies and Children (see *British Medical Journal*), 1s. per tin.

VAN ABBOTT'S Dietary Tables, Menu, Cooking Receipts, and Price List, post free from

G. VAN ABBOTT AND SONS,

Diabetic, Invalid and Infant Dietetic Depôt,

6 DUKE STREET MANSIONS, GROSVENOR SQUARE, W., and all CHEMISTS.

ESTABLISHED 1859.] [Telegraphic Address:—"GLUTENS, LONDON."

New Patent Ovens and Bakehouse above Ground:—3 BADEN PLACE, BERMONDSEY, S.E., under the personal superintendence of one of the Firm.

Agents for Dublin:

Retail: W. H. BOWERS & CO., GREAT BRUNSWICK-STREET.

Wholesale: HUNT & CO., WESTLAND-ROW.

MEDICAL PLATES.

MEDICAL PLATES and ILLUSTRATIONS

EXECUTED IN VARIOUS COLOURS IN THE BEST STYLE BY

JOHN FALCONER,

53 UPPER SACKVILLE-STREET, DUBLIN.

Founded 1805. The Oldest Scottish Insurance Institution.

Caledonian Insurance Company.

Head Office:

19, GEORGE-STREET, EDINBURGH.

BOARD OF DIRECTORS.

Chairman—THE HON. E. C. BULLER ELPHINSTONE.

A. A. MACONOCHIE WELWOOD, Esq., of Meadowbank and Garvock.
JOHN WILLIAM YOUNG, Esq., Writer to the Signet.
WILLIAM STUART FRASER, Esq., Writer to the Signet.
PETER HUME MACLAREN, Esq., M.D.
THOMAS ALEX. HOGG, Esq., of Newliston.
PATRICK STIRLING, Esq., Younger, of Kippendavie.
SIR GEORGE WARRENDER, of Lochend, Bart.
GEORGE READMAN, Esq., 9 Moray Place, Edinburgh.
JOHN TURNBULL, Esq., of Abbey St. Bathans, Writer to the Signet.
CHARLES J. HENDERSON, Esq., 6 Drumsheugh Gardens, Edinburgh.
ROBERT HUTTON LEADBETTER, Esq., Merchant, Glasgow.

Manager and Actuary—D. DEUCHAR, F.I.A., and F.F.A.

DUBLIN BRANCH—31 Dame-street.

SECRETARY—JAMES F. WRIGHT. | *ASSISTANT SEC.*—WILLIAM COOTE.

MEDICAL OFFICER—JAMES LITTLE, M.D., 14 St. Stephen's-green, North.

SOLICITORS—Messrs. MEADE & COLLES, 8 Kildare street.

BANKERS—THE ROYAL BANK OF IRELAND.

Fire Insurances.

Insurances against loss by Fire are granted on the most favourable terms. The Security is unsurpassed, the proportionate amount of Fire Reserve Funds, as compared with the Premium Income, being greatly larger than in the case of most other offices. Losses by Lightning are admitted.

Life Assurance on unusually favourable terms.

CLASS A1.—Moderate Premiums, with Early Bonuses, which may be applied either to increase the sum assured or to make the Policy *payable during life.*

CLASSES A2 and B.—Lowest Premiums, with special Bonus advantages to persons attaining old age.

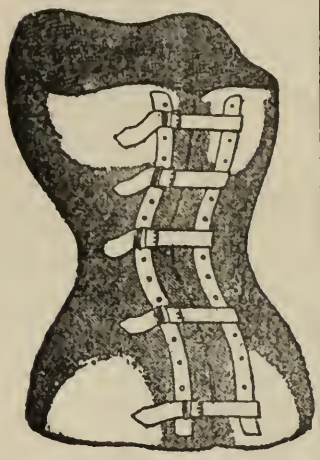
NEW and SELF-ACTING NON-FORFEITABLE SYSTEM.—Under this System the Surrender Value is applied to pay overdue Premiums, thus preventing the accidental forfeiture of any valuable Policy. Although this plan is new in Great Britain, a similar plan has for some years been carried on with much success in the Australian Colonies. The AUSTRALASIAN INSURANCE AND BANKING RECORD concludes an article on the Non-Forfeitable System in the following terms :—

"It is to the credit of the CALEDONIAN that it should be the first to introduce this liberal feature into practice in Great Britain. As the precursor of a new and better state of things in the Insurance world there, it deserves, as we trust it will find, its reward in a large accession of business."

New Life Assurances in 7 years ending 31st December, 1874	**£856,399**
New Life Assurances in 7 years ending 31st December, 1881	**£1,730,330**

The Fire and Life Claims paid exceed Two Millions Sterling.

Cocking's Adaptable Poroplastic Jackets and Splints.



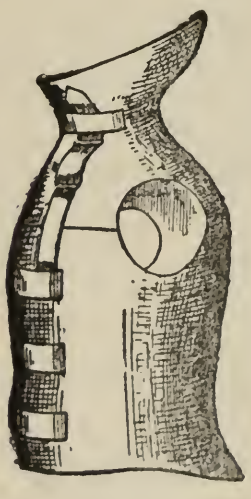
Instructions for Measurement, &c.

JACKET (*in cases of slight deformity*).

Circumference at axilla.
„ waist.
„ hips.
Length from axilla to great trochanter.

In severe angular cases circumference over apex of curve, position of same, and contour should be given; in lateral cases a description of the case.

In all cases it should be stated if for male or female.



CERVICAL JACKET.

Same measurements required, and circumference at neck, and length from neck to axilla.

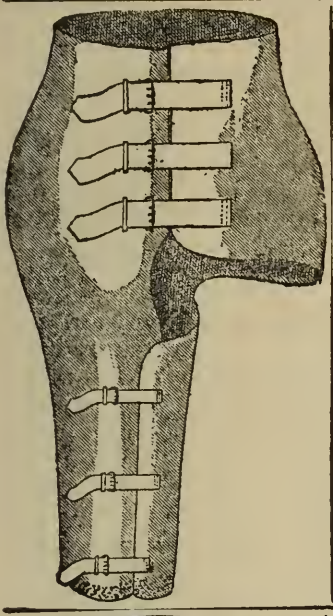
Any part of the Jacket can in the process of Manufacture be left Soft.

CLUB FOOT.

Circumference below knee.
„ ankle.
„ heel and instep.
Length from below knee to ground.
„ of foot.

Sole Agents for Dublin—**FANNIN & CO., Limited,**
Manufacturers of Surgical Instruments & Appliances, Medical Booksellers & Publishers,
41 CRAFTON-ST., DUBLIN.

Cocking's Adaptable Poroplastic Jackets and Splints.

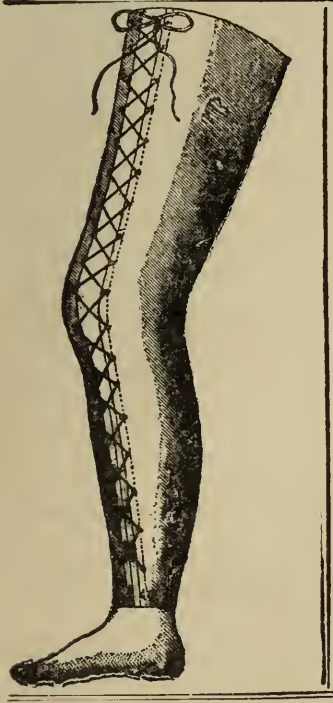


Instructions for Measurement, &c.

HIP SPLINT.

Circumference at waist.
„ hips.
„ thigh, top of
„ above knee.
Length from waist to groin.

State if for right or left side.



LEG SPLINT.

Circumference at top of thigh.
„ above knee.
„ at knee.
„ below knee.
„ calf.
„ ankle.
Length from groin to centre of knee.
„ centre of knee to ankle.

State if for right or left leg.

When the foot-part is required, also circumference of heel and instep, and length from centre of knee to ground.

If the limb is contracted the contour should be given.

Splints are also made in Poroplastic for fracture of Inferior Maxilla, Humerus Elbow-Joint, Forearm, Thigh, Knee-Joint, Leg, Shoulder-Joint, Hand, &c.

These Splints can be fitted perfectly to the Patient if softened either by hot water or in a Heater made for the purpose. When mounted with webbing, hot water will do; if with leather, a Heater should be used. The material becomes quite hard again in two or three minutes.

Sole Agents for Dublin—**FANNIN & CO., Limited,**
Manufacturers of Surgical Instruments & Appliances, Medical Booksellers & Publishers,
41 GRAFTON-ST., DUBLIN.

Lysol

Antiseptic & Disinfectant.

Awarded, wherever exhibited, with First Prizes and State Medals.

LYSOL has, since its invention, been continually and thoroughly investigated and tested scientifically and practically by a large number of University Laboratories and Hospitals throughout the world, and proved to be not only highly superior in action to carbolic acid, Creoline and similar preparations heretofore in use, but at the same time also practically non-poisonous. It is therefore as well highly appreciated by the medical and veterinary profession, as also considered to be the most fit preparation to be kept and sold by chemists and druggists in open sale for home and family purposes. It can be safely entrusted to the hands of midwives, sick-nurses and the public in generel, because even in the case of ill-usage the danger connected with the use of corrosive sublimate, carbolic acid, &c., is reduced to the possibly smallest scale (considering a reliable and strong-acting remedy) by the use of LYSOL.

But LYSOL is not only a superior antiseptic and disinfectant, it has also been proved to be an excellent specific remedy for a number of external diseases, particularly such of parasitic nature, with man and beast, and hence its use throughout all countries of the world by surgeons, gynaecologists, physicians, veterinary surgeons, midwives, horse and stockowners, and particularly for **general disinfecting purposes in household and stable.**

LYSOL has been endorsed by the leading hygienic, surgical, gynaecological, and veterinary professionists of the continent.

In the year of cholera, 1892, LYSOL was the officially recommended disinfectant by the greater number of European Governments, and it has since been officially prescribed for the use of midwives by several medical State authorities of Germany.

LYSOL is in sole use in the majority of German, Austrian, and Swiss Female Hospitals. It is further more extensively employed by state, county, and borough authorities for the use of public disinfection, as well as for hospitals, infirmaries, prisons, railway and cattle trucks, ships, and by the army and navy.

The composition of LYSOL is no secret; it has been published. It is a pure Cresol preparation, and is guaranteed to contain the highest percentage of cresylic acid (in free state and neutral solution) of any preparation in the market.

LYSOL gives **clear solutions** and no emulsions with clean water; the solutions are non-caustic and non-corrosive, and possess the cleansing properties of mild, non-alkaline soap.

To warrant the permanent constituency of the preparation and hence its uniform action, the manufacturers have succeeded in gaining the following Professors of Universities and Veterinary Colleges, to control their works and endorse the label of LYSOL, viz.: Prof. Dr. Schottelius, Freiburg; Prof. Dr. M. Gruber, Vienna; Prof. Dr. Engler, Karlsruhe; Prof. Dr. Arnold, Hannover; Prof. Dr. Rossel, Bern.

Our method of manufacture, our trademark, and the name "LYSOL" are protected throughout the world by the laws of the respective countries. Infringements will be prosecuted.

Beware of spurious imitations, and refuse every article not bearing the name of our firm and trademark.

Sole Manufacturers: SCHÜLKE & MAYR, Hamburg, Vienna.

Sample Bottles and Directions for use on application to

FANNIN & CO., Ltd., 41 Grafton-street, Dublin, Agents for Ireland.

Ross's
Royal
Belfast
Aërated Table Waters
DESIGNED & PRINTED BY N. LLOYD & CO. LONDON.

Dr. A. B. GRIFFITHS, F.R.S. (Edin.), F.C.S.,

Member of the Chemical Societies of Paris and St. Petersburg; Lecturer on Chemistry, Central School of Chemistry and Pharmacy; Analytical Chemist and Assayer; Consulting Chemist to National Amateur Gardeners' Association; Diplômé de l'Institut de France (l'Académie des Sciences).

Author of "A Manual of Bacteriology," "Researches on Micro-Organisms," "The Physiology of the Invertebrata," "A Treatise on Manures," "The Diseases of Crops," "Manures and their Uses," "Special Manures for Garden Crops," "A Manual of Assaying," etc.

Bacteriological and Agricultural Expert.

Agricultural Analyst for the County Soke of Peterborough.

12, KNOWLE ROAD, BRIXTON,
LONDON, March 17th 1896.

I hereby certify that I have examined Ross's "Royal Belfast Ginger Ale", and find that it is a genuine preparation, and contains nothing that is injurious It is, in fact, a salutary, palatable and invigorating beverage - being made of materials of absolute purity. It possesses a flavour and bouquet which render it quite unique. I can conscientiously state that Ross's "Royal Belfast Ginger Ale" is a wholesome delicious drink, possessing sustaining and invigorating qualities. It is the finest Ginger Ale I have ever examined.

A. B. Griffiths
Ph. D.

The Best & Tasteless Natural Aperient

ÆSCULAP

"Possesses all the good properties claimed for other well-known aperient waters."—
Professor KARL von KETLI.

"Invaluable in all cases where a safe and efficient aperient is required."—
Professor FRIEDRICH von KORANYI.

"I prescribe Æsculap in preference to all the other saline waters."—
Professor ERNST SCHWIMMER.

"A reliable, safe, and efficacious aperient."—Professor AYTEL von BAUDIS.

"Free from any foreign additions."—Professor LIEBERMANN.

"Free from any organic impurity."—Professor TICHBORNE.

"The clearest and purest of all the Hungarian aperient waters."—*The Hospital.*

THE BOTTLING AND MANAGEMENT OF THE ÆSCULAP SPRINGS AT BUDAPEST ARE CARRIED ON DIRECTLY UNDER ENGLISH SUPERVISION.

The Æsculap Bitter Water Company, Ltd., 51 Farringdon-street, London, E.C., and Budapest.

NOTICE TO STUDENTS.

SESSION 1896-1897.

FANNIN & COMPANY,

(LIMITED)

Keep the Largest Stock in Ireland of

Dissecting Instruments,

Osteology,

Dressing Instruments,

Ophthalmoscopes, &c.

See their PRICE LIST of STUDENTS' INSTRUMENTS and BOOKS.

FANNIN & CO., Ltd., 41 Grafton-st., Dublin.

A Popular Manual on Hygiene.

Just Published, with numerous Illustrations,
Price 2s. 6d. net; post free, 2s. 9d.

The Imperial Health Manual,

BEING THE AUTHORISED ENGLISH EDITION OF THE HEALTH MANUAL ISSUED BY THE IMPERIAL HEALTH DEPARTMENT OF GERMANY.

Specially adapted for the Heads of Schools, and those in charge of the Young or Sick.

EDITED BY

ANTONY ROCHE, M.R.C.P.I.,

Professor of Medical Jurisprudence and Hygiene, Examiner in the Royal University of Ireland.

"An excellent treatise on an important public subject."—*Lancet.*

"The book is well illustrated, and printed on good paper. We can strongly recommend it to all who take an interest in sanitary science."—*British Medical Journal.*

Dublin: FANNIN & CO., Ltd., Grafton-street.

London: BAILLIERE, TINDALL & COX, King William-st., W.C.

Edinburgh: JAMES THIN.

Bristol: JOHN WRIGHT & CO.

AND ALL BOOKSELLERS.

FANNIN & CO.'S CLINICAL THERMOMETERS.

	£	s.	d.
Clinical Thermometers, Plain - - - - -	0	1	9
A.—Fannin & Co.'s Hospital Clinical Thermometers, any length, with indestructible Index, 2½, 3, 3½, and 4 inches, in Metal Cases - - - -	0	2	0
C.—Fannin & Co.'s Improved Clinical Thermometer, round	0	3	0
D.—Fannin & Co.'s do. do. with flat back -	0	4	0
E.—Fannin & Co.'s Improved Half-Minute Thermometer	0	4	0
F.—Fannin & Co.'s Improved Clinical Thermometer, with Lens Front Magnifying Index - - - -	0	5	0
G.—Fannin & Co.'s Improved Clinical Thermometer, in Bayonet-joint Case - - - - - -	0	5	0
H.—Fannin & Co.'s Improved Half-Minute Thermometer, with Lens Front Magnifying Index - - -	0	6	6
Immisch's Patent Metallic Clinical Thermometers, in Sterling Silver, very portable - }	18/6 &	1	1 0
Surface Clinical Thermometers, in various shapes - - - - - }	13/6, 15/–, &	1	1 0
Veterinary Thermometers, in various lengths, enclosed in protecting Tubes - - }	10/6 &	0	14 0

SPECIAL QUOTATION FOR QUANTITIES.

Certificates of Corrections determined by comparison with the Standard Instruments at Kew Observatory supplied with each Thermometer for 1*s.* 6*d. extra.*

FANNIN & CO. guarantee every Thermometer bearing their name to be of standard precision.

BREAKAGE of CLINICAL THERMOMETERS.—From the nature of their construction, Clinical Thermometers are exceedingly fragile, and there is considerable risk of breakage in their transmission either through the post or by any other mode of conveyance. We use every precaution in packing, but do not guarantee safe delivery, and can only supply them at the risk of purchasers.

FANNIN & CO., LTD.,

Surgeons' Instrument Makers,

41 GRAFTON-STREET, DUBLIN.

TELEPHONE No. 198. Telegraphic Address—"FANNIN, DUBLIN."

"The Perfection of Nursery Powders."

Awarded Silver Medal, International Health Exhibition, London, 1884.

WOOLLEY'S

"Sanitary

ANTISEPTIC & SOLUBLE

Rose Powder"

For NURSERY and TOILET USE.

"Fragrant, Soothing, Cleanly."—*The Queen.*

A most useful and elegant preparation of Boric Acid, having the advantage of being soluble and non-irritating, yet mildly astringent. It soothes the skin from irritation and the effects of cold winds, sun-burn, heated rooms, &c. An excellent powder for the skin after shaving.

The Medical Annual says:—"The best form of dusting powder for Nursery and Toilet use which has come under our notice."

The Nurses' Journal reports:—"We have tried it extensively, and found it most useful."

A Medical Practitioner writes:—"Our children never chafe while using it."

A Lady writes:—"It is the softest and most delicate powder I have ever used."

The Practitioner says:—It is pleasant to use, and thoroughly satisfactory in its effects."

OF ALL CHEMISTS:

White, Pink, or Cream. In Boxes, 1/-, 1/9, & 3/-. Large Bottles, 5/-.

N.B.—Purchasers are requested to see that each box is in a blue wrapper with pink label, and bears our name, and Trade Mark—"THREE ARROWS."

MANUFACTURERS—

JAMES WOOLLEY, SONS & CO., LTD.,

MANCHESTER.

AWARDS

GOLD MEDAL, International Health Exhibition, London, 1884.

First Order of Merit & Medal (Highest Award), Adelaide, 1887.

HIGHEST AWARD, Medical & Sanitary Exhibition, London, 1882.

First Order of Merit and Medal, Melbourne, 1888.

BENGER'S FOOD

FOR INFANTS, CHILDREN, AND INVALIDS.

This delicious and highly nutritive Food was awarded the GOLD MEDAL at the International Health Exhibition, London, and has since received a High Award at every Exhibition at which it has been shown.

BENGER'S FOOD is well known to leading medical men, and is recommended by them.

The following extracts from the Medical Journals, &c., sufficiently indicate its high character, and the estimation in which it is held alike by the Medical Profession and by the Public:—

The LANCET of March 25th, 1882, says:—

"We have on a previous occasion noticed some of Mr. Benger's admirable preparations. Those now before us are not less satisfactory."

The BRITISH MEDICAL JOURNAL, August 25th, 1883, says:—

"Benger's Food has by its excellence established a reputation of its own."

The ILLUSTRATED MEDICAL NEWS, Dec. 22nd, 1888, says:—

"Benger's Food is a preparation devised on original lines, and which we can speak of in the highest terms. . . . Infants do remarkably well on it, and it is most suitable for many conditions in adults and old people. Amongst other things, we may mention that this food has been found extremely useful in the Summer Diarrhœa met with in some of our Colonies, where the distaste for food and difficulty of digestion are very marked. There is certainly a great future before it."

The LONDON MEDICAL RECORD, March 15th, 1882, says:—

"It is palatable and excellent in every way. It is taken readily both by adults and children. We have given it in very many cases with the most marked benefit, patients frequently retaining it after every other food has been rejected. For children who throw up their food in curdled masses it is invaluable"

The JOURNAL DE MÉDECINE DE PARIS, March 17th, 1889, says —

"C'est un exemple heureux de l'application des données de la science à la pratique, et nous ne doutons pas que ce produit ne jouisse bientôt en France de la grande vogue qu'il s'est légitimement acquise en Angleterre."

The HEALTH JOURNAL, November, 1883, says:—

"We direct especial attention to this article because it is a good illustration of the practical application of scientific knowledge to one of the everyday requirements of mankind."

From an EMINENT SURGEON.

"After a lengthened experience of Foods, both at home and in India, I consider 'Benger's Food' incomparably superior to any I have ever prescribed."

A MEDICAL MAN writes:—

"This particular food is the only one I have been able to take constantly and with advantage I have prescribed it for others with the best results."

EXTRACTS FROM PRIVATE LETTERS.

The Countess of ——— writes:—"I really cannot resist telling you of the marvellous results of 'Benger's Food.' Not only am I quite renovated by a cupful every morning, but my daughter is taking it and finds great benefit."

"I consider that, humanly speaking, 'Benger's Food' entirely saved baby's life. I had tried four other well known foods, but he could digest nothing until we began the 'Benger.' He is now rosy and fattening rapidly."

"If every mother knew of its value no other would be used."

BENGER'S FOOD is sold in Tins at 1s. 6d., 2s. 6d., 5s., & 10s. each by Chemists, &c., everywhere.

RPENTA"

BEST NATURAL APERIENT WATER

RAL HUNGARIAN APERIENT WATER.

Bottled at the Springs, Buda Pest, Hungary.

ntrol of the Royal Hungarian Chemical Institute (Ministry of Agriculture). Buda Pest.

richer in mineral salts than all Continental
efficacy is so great that even the smallest dose
lts."

John. Moharay

Sworn Chemist in Buda Pest.

D BY THE ACADÉMIE DE MÉDECINE, PARIS.

LANCET" says:—

ive water."—"Its composition is con-
s enabled to prescribe definite quantities
tural Water."

EDICAL JOURNAL" says:—

"THE MEDICAL PRESS AND CIRCULAR" says:—

"Belongs to that large class of aperient waters which come from the neighbourhood of Buda Pest."—"Contains a large amount of lithia. Specially marked out for the treatment of gouty patients."

"THE DUBLIN JOURNAL OF MEDICAL SCIENCE" says:—